

Flight, August 5, 1911.

FLIGHT

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Lieut. Conneau ("Beaumont") leaving Buckingham Palace last week after his audience with King George.—On the left is Mr. N. Chereau, the British representative of M. Blériot, and on the right M. Hugues Simon, a well-known French journalist.

THE GREAT RACE.

It is now almost a matter of ancient history—how "Beaumont" won the great Circuit of Britain race in the air, with Vedrines hard on his heels the whole way round. Much ink has been shed in illuminating the personalities of the two men, and in the glorification of their wonderful pluck and endurance, with the result that both of them are probably better known to the man in the street than many of those who direct the fortunes of empires. And of that we are exceedingly glad. We do not belong to that class which is the main support of the weekly illustrated journals, which depend for their popularity on the glorification of the stage, and which have done much—too much—to propagate the unfortunate disease of "swelled head" among those who follow "the" profession in search of their daily bread. Therefore, we are dead against the modern disposition to lionise all and sundry, with or even without excuse; but this race of the air is one of those occasions on which it is more than justifiable to make heroes of men. Not only is it justifiable from the point of view that here are men who have done something daring—something that was by most thought impossible, and something which needed the highest development of all those attributes of courage and skill, which have called forth the admiration of men since ever the world began—but we may go a little farther and say that it is even politic that things should have fallen out as they have happened. To add to the general acclamation of Lieut. Conneau's magnificent win, and Vedrines' equally splendid showing, would lead us into mere platitudes and plagiarism, for all has been said by ourselves and others that seems possible to be said. Therefore, the victor having received the spoils of war and been duly acclaimed, we may perhaps with profit pass on to a consideration of the more material aspects of the race and its result.

We have said that all the lionising of the aviator is justifiable and politic—not that we have seen it argued to the contrary, but it is as well that it should be pointed out that this is no case of popular hero-worship, pure and simple. The first essential to the success of any new movement is that it should become a popular one. It is quite possible to conceive that had the *Daily Mail* and the journals associated with it not boomed the race in the way they did, hardly a shred of general interest would have been taken in the aviators and their doings. As it was, the whole kingdom went flying mad, to use the popular term, during the days when the interest of the race was at its height. Literally millions of people saw some part of the race and the great majority of them saw aeroplanes for the first time in their lives. Thus flying was brought home to them in a tangible form. The thing of which they had read with merely passing interest as something unfamiliar, and even a little uncanny, was brought to their doors and they were made to realise that here was a new and material thing which had come into being, and whose real potentialities no man could with anything approaching certainty foretell. And with what intense and breathless interest the race was followed! In the streets, in the clubs, in public conveyances, there was but the one topic of conversation—the great race. It is no exaggeration to say that though a great European war had broken out between Monday and Wednesday of last week it would have had to take second place in the popular mind until the first of the flyers had safely reached Brooklands. All this of course is well enough in its way, but what we are concerned with is, will

there be any permanent effect or will the impressions prove to be fleeting? Most certainly the former. Indeed it is inconceivable that it should be otherwise, for the impression produced was far too deep and too general to be evanescent. For weeks before the race the *Press of the country* had been busy in raising expectation to its very tiptoe. By the time the race was due to begin, the man who had never in his life seen an actual aeroplane was familiar with the features of all those who were to take part; he knew the exact type of machine which each was to fly, and how to separate it from its fellows by the recognition of its main constructional details; and one heard on all hands discussion of the respective merits of this or that machine, conducted with all the set gravity of the lecture room. All this cannot go for nothing. If it goes no farther, it must have driven home the main fact that a new era has arrived in which the last remaining element has been almost mastered by the genius of man, and have set the more thinking section of the people speculating very seriously upon its true significance. Therefore, the good the race has done for the movement itself must be absolutely incalculable—it simply cannot be reduced to expressions of words or figures.

Apart from these general aspects of the race, there are other considerations of a more specific character which must not be lost to sight. It is simply platitudinous to say that the reliability of the aeroplane has been proved by the result of the race. True, there is that lesson to be deduced from the performances of "Beaumont" and Vedrines, but on the other hand there is also the one taught by the number of failures that we still have a long way to go before we reach a state of even relative perfection. An analysis of the causes of failure shows that they may practically be summed up under the one heading of engine trouble. Pursuing the argument, we must arrive at the conclusion that, far as we have advanced in the direction of the light and reliable motor, we are still awaiting the advent of the one thing that will speedily make flight a *commercial* possibility. In a word, we are now in the case of the aeroplane motor where we stood ten years ago with the car engine.

There remains another and extremely serious lesson of the race to be considered and that is the incontestable superiority manifested by the French flying men over our own. We do not for a single instant wish to be thought unpatriotic or wanting in sympathy with our own aviators, but we cannot refrain from saying that we almost view with something akin to satisfaction the absolutely decisive victory of the two Frenchmen. There was nothing of the fluke in it—it was a triumph of superior skill and seriousness of purpose. Surely there is here the main lesson of the race so far as we who stand for the more serious side of the movement are concerned. Had the race been won by a British competitor we should have been apt to view the result with smug complacency and to have pointed to the victory as an evidence of the fact that we are abreast of our rivals. We appreciate that abroad the aviators have received in every way vastly more encouragement both material and moral, which has led to their great proficiency. But as things happened we were nevertheless too well and soundly beaten to leave room for any feeling but the one that if we really mean to achieve our proper position our men will have to follow the example of the French, and treat it as a serious scientific study.

MEN OF MOMENT IN THE AVIATION WORLD.



Special portrait by FLIGHT.

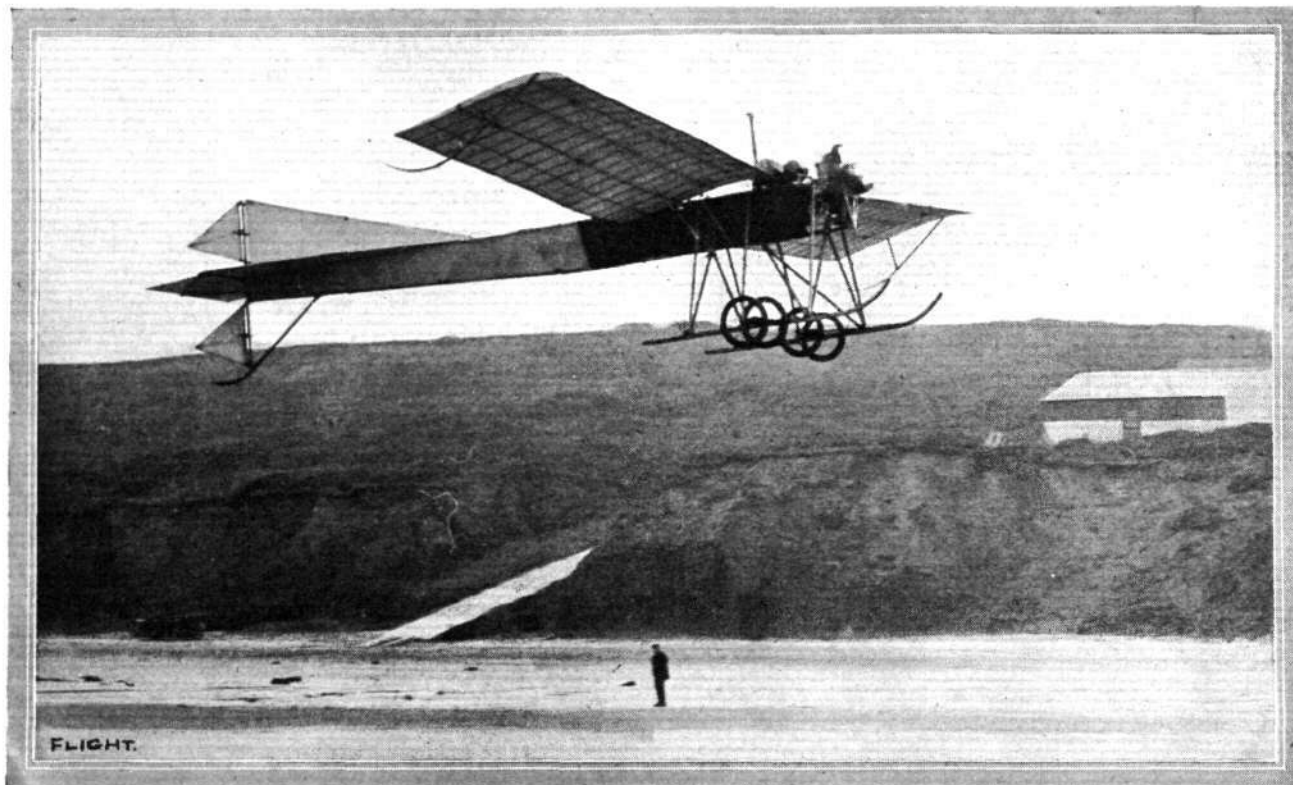
LORD NORTHCLIFFE,

Who has with such magnificent generosity contributed towards encouraging the Science of Aviation.
[Our portrait was taken at Brooklands by special permission on Wednesday of last week, when Lord Northcliffe was at the aerodrome to greet Lt. Conneau, the winning aviator in the Circuit of Britain.]

THE BLACKBURN MONOPLANE.

AMONG the British firms early in the aeroplane industry, the Blackburn Co., of Leeds, is now achieving a success that is the reward of steady perseverance. Their machines have been flying particularly well lately over the Filey sands, and it is interesting, therefore, to

supported on a Farman type wheel and skid combination, but the skids have a narrow track of only five feet and the body is supported above them by a very substantial multiple "A" frame, which gives great rigidity and strength to the fore part of the machine.



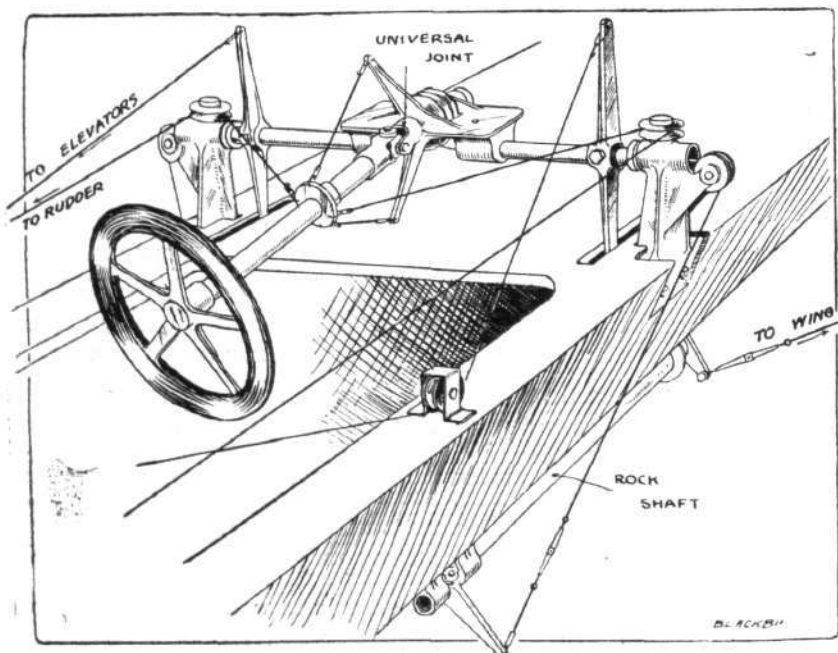
The Blackburn monoplane in flight.

publish at this moment the accompanying illustrations showing their general lines and constructive detail.

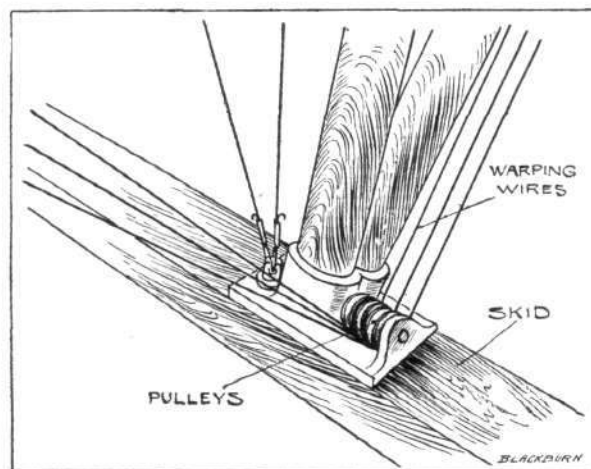
Broadly speaking, the Blackburn monoplane must be classified as belonging to the Antoinette type, its dihedral double-surfaced wings, boat-like covered body, and general arrangements of the tail members being superficially similar to this prototype. In detail, however, the apparent similarity disappears to give place to marked originality of constructive work. A mere glance at the accompanying full page drawing is sufficient to indicate at least one decided departure from Antoinette practice in the use of an under-carriage of altogether different design. The Blackburn monoplane is

The skids, it will be observed, are carried sufficiently far forward to protect the propeller, which is of unusually large diameter owing to the use of an Isaacson stationary radial engine, one of the features of which is, as our readers are aware, the combination of the engine with a half-speed reduction-gear for the propeller-drive. From the point of view of protecting the propeller, the utility of the strong "A" frame becomes still more apparent, for it will be noticed how little overhang there is to the toe of each skid.

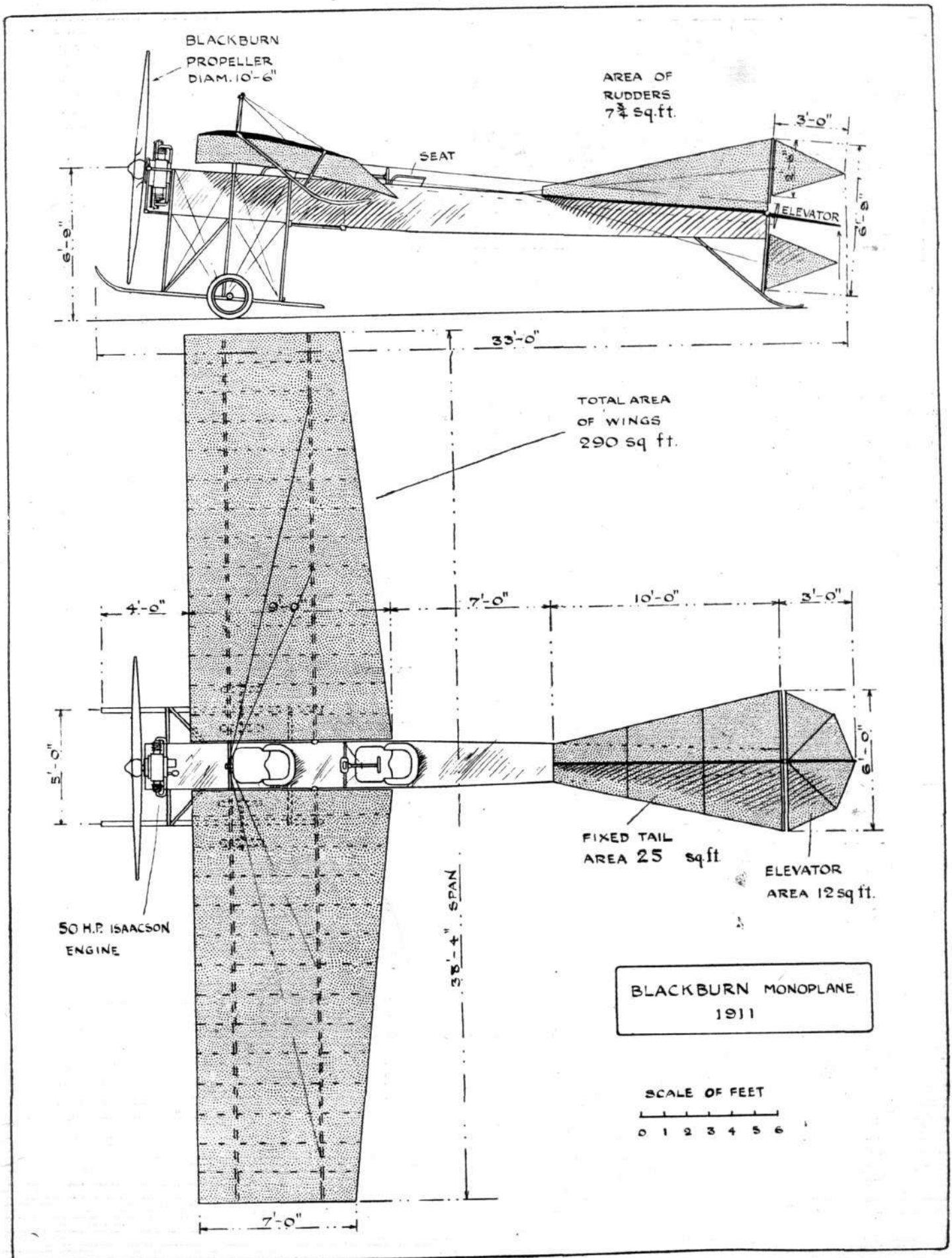
The body of the machine is triangular in section and tapers towards the tail aft of the pilot's seat. It is built throughout of ash in the form of an openwork lattice girder, the vertical and diagonal struts being carefully butted against the longitudinal booms so as to make a thoroughly sound job without the use of wire. When finished, the body is surfaced with fabric on the after part and with veneered wood in front.



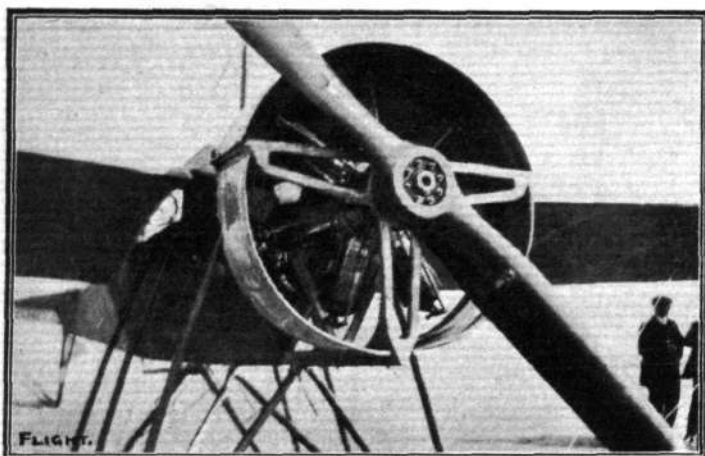
Sketch showing the control system of the Blackburn monoplane.



Sketch illustrating the very neat pulley arrangement combined with a strut socket on one of the skids of the Blackburn monoplane.



THE BLACKBURN MONOPLANE, 1911.—Plan and elevation to scale.



THE BLACKBURN MONOPLANE.—View showing the method of mounting and encasing a Gnome rotary engine, when this type of motor is employed.

Ash spars are also used in the wings, and these are grooved to an I section so as to combine lightness with strength. The ribs are very carefully built about the spars, and a certain amount of lattice girder work is also introduced into the construction of the wing so as to increase its rigidity. The front main spars are rigidly fixed to the body, but those behind are hinged in order to facilitate wing warping.

The control of the Blackburn monoplane is one of the special features of its design, a universal mechanism being employed which differs, however, from the usual types. Immediately in front of the pilot, who occupies a seat in line with the trailing edges of the wings, is a steering-wheel placed in a vertical plane on a longitudinal shaft. This shaft terminates in a universal-joint, the forward portion of which is itself mounted in bearings on a bracket that is attached to a hollow transverse-shaft carried in supports projecting above the body of the machine. This transverse-shaft is divided at the centre in order to accommodate the aforementioned bracket, which is itself

cut away so as to give room for a small winding-drum that is attached to the forward extremities of the universally-jointed shaft.

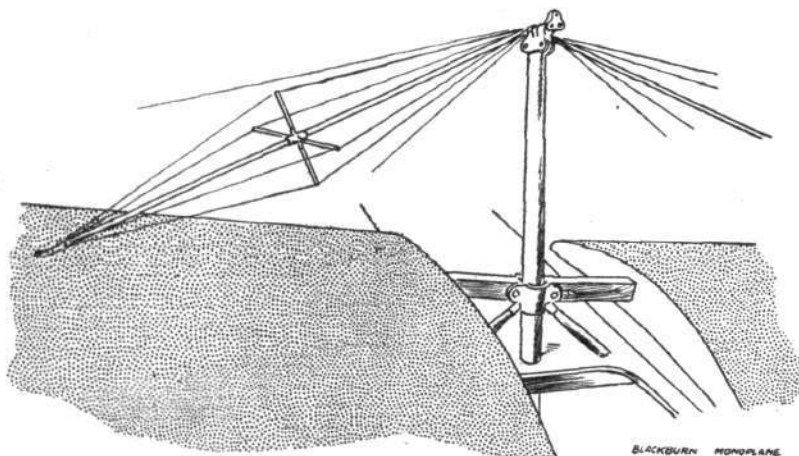
When the hand wheel is rotated, this winding drum operates a cord passing through the hollow transverse-shaft over pulleys to a lever that controls a longitudinal rock-shaft situated immediately under the body of the machine. From the forward end of this underneath rock-shaft other cords pass to the rear spars of the wings, for the purpose of warping. Turning the wheel is, therefore, employed for the purpose of balancing the machine by wing-warping.

Between the hand-wheel and the universal-joint, the first-mentioned shaft carries a fixed collar from which radiate four wires. Two pass over pulleys mounted on the tops of the brackets that support the transverse rock-shaft. The other two are connected in such a way that an up and down movement of the wheel causes the transverse-shaft already mentioned to rock. On the transverse-shaft is a lever from the extremities of which wires pass to the elevator. Raising and lowering the hand-wheel is thus employed for controlling the attitude of the machine in flight by means of the elevator, which consists of a hinged extension to the fixed horizontal tail plane.

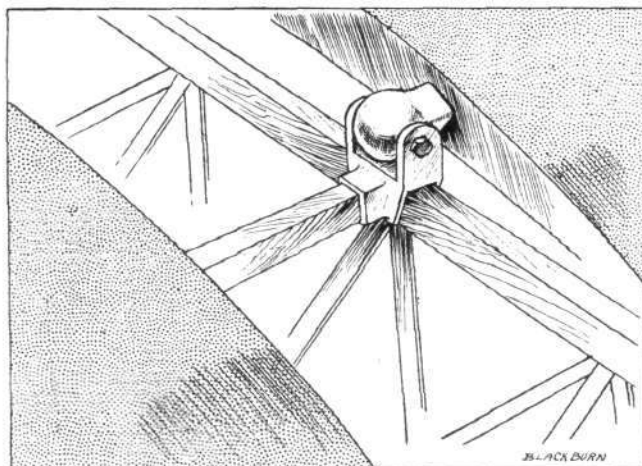
When the hand-wheel is moved bodily sideways, the other wires, already described, operate the rudder, which consists of two triangular planes situated above and below the elevator. The special shape of these rudder planes is, of course, to enable the elevator to move up and down to the required extent.

The tail portion of the machine is supported above the ground by a simple skid that is trussed by the rudder post. Similar skids may also be observed on the extremities of the main wings, where they act as fenders should the machine accidentally heel over while running along the ground.

By no means the least interesting point in connection with the development of the Blackburn aeroplane is the fact that this Company have from the first been firm supporters of the Isaacson radial stationary engine. As our readers are already familiar with the features of this motor, it is, however, unnecessary to do more than merely refer to its three outstanding peculiarities, the first of which is that although radial the engine does not revolve; the second being that while stationary the engine is, nevertheless, air cooled, while the third feature is that, while the propeller is mounted concentrically about the crank-shaft it is, nevertheless, driven at half engine speed.



Sketch illustrating the mast and special arrangement of guy wires for the support of the main wings on the Blackburn monoplane.



Sketch illustrating the hinged attachment of the rear spar in the main wings to the body of the Blackburn monoplane.

Trials with the Airship "Le Temps."

THE Zodiac Vedette airship has been kept very busy during the past week or so. On the 25th ult. it was out for 2½ hrs. about the Villepreux Plain, while in the afternoon, during a voyage of three-quarters of an hour, it carried two Japanese naval officers. The following day it was up for 2½ hrs., and on the 27th, with four persons on board, it started from St. Cyr and cruised over Guyancourt, Toussus, St. Aubin, Montléry, and Brétigny, returning to its headquarters *via* Bures, Saclay, Jouy-en-Josas, and Versailles, the round trip occupying 3½ hrs. In the afternoon the airship was out for an hour.

A Long Flight by "Parseval VI."

LEAVING Hamburg at 9 o'clock in the morning on the 10th ult., the dirigible "Parseval VI" arrived at Essen at 4 o'clock. The next day the journey was continued to Leichlingen, where

after an hour and three quarters the dirigible landed, and was placed in the shed built for the Erbsloh airship. In the afternoon, with twelve passengers on board, the airship went for a voyage over Dusseldorf, Crefeld, and Elberfeld. The airship remained at Leichlingen for a week.

Three Airships at French Review.

DURING the review of the troops at Longchamps on the 14th ult., three airships were seen overhead. These were the "Adjutant Vincenot" (*née* "Clement-Bayard IV"), the Zodiac "Le Temps," and the "Astra-Torres." The Zodiac dirigible had come over from St. Cyr, while the other two airships started from Issy. Last Saturday morning, General Roques went for a trip in the "Astra-Torres," and he was to have taken a cruise in the Clement-Bayard airship in the afternoon, but it was decided to postpone this, after the accident to Brindejonc des Moulinais.

THE "DAILY MAIL" CIRCUIT OF BRITAIN.

ALTHOUGH the £10,000 offered by the *Daily Mail* has been won, the race is not yet over, as Mr. Valentine and Mr. Cody are still making the pluckiest of efforts to complete the circuit.

Mr. Hamel, after reaching Thornhill, north of Dumfries, as recorded in our last issue, then decided to retire.

Mr. Valentine, although his engine had given him a good deal of trouble in the morning, was able to leave Carlisle at 3 o'clock in the afternoon of Friday last week. He got off his course through keeping too close to the coast, and came down at a village near Workington. He was able to start again, and eventually reached Widnes, where he stopped for the night. The following day he was delayed by the strong wind, but was able to get away from Widnes about twenty past eight, and reached Trafford Park just before nightfall. He made a fresh start on Monday morning, and landed at Springhill, near Madeley, in Shropshire, after an hour and three-quarters' flight, in order to obtain further petrol. On re-starting he only got to Bridgnorth. Getting away in the evening he passed over Worcester just before eight, and reached Gloucester at twenty-four minutes past eight. Although a strong wind was blowing on Tuesday morning, he was able to complete the stage to Bristol, where he decided to wait and see if the weather would

PRESENTATION OF THE £10,000.

A luncheon at the Savoy was given by the *Daily Mail*, at which Lord Northcliffe presided, on Friday, when the cheque for £10,000 was presented to Lieut. Conneau and the £200 consolation prize to Vedrines by the Chairman. Great enthusiasm prevailed, and a number of notable guests were present in honour of the occasion, amongst those being the Duke of Argyll, Lord Faber, Bishop Welldon (Dean of Manchester), Mr. Roger Wallace (Chairman of the Royal Aero Club), Sir Charles Ottley, the Lord Mayor of Bristol, Mr. Arthur Du Cros, M.P., Mr. A. J. Bird, M.P., Sir Charles Friswell, Sir William Treloar, Sir H. Johnston, Mr. Davison Dalziel, M.P., Sir Hiram Maxim, Sir Harold Harmsworth, Professor Huntington, Mr. Edward White (Chairman of the London County Council), Mr. Kennedy Jones, Mr. Thomas Marlowe, M. Norbert Chereau, Mr. Grahame-White, Mr. Robert Loraine, Mr. Locke King, Maj. Lindsay Lloyd, the Mayor of Brighton, the Mayor of Harrogate, Mr. Holt Thomas, Mr. N. C. Neill, Mr. Stanley Spooner, Capt. Hankey, Mr. Harold Perrin, M. Hugues Simon, Mr. Ballin Hinde, Mr. C. G. Grunholt, Lieut. Bier, Herr Etrich, Mr. Compton Paterson, Mr. Gordon-England, M. de Montalent, Mr. Asley, &c. The tables were arranged in



CIRCUIT OF BRITAIN.—Lieut. Conneau ("Beaumont") finishing on his Blériot and winning the £10,000 at Brooklands on Wednesday, July 26th.

moderate. He was away again on Wednesday morning, and landed safely at Exeter at 8.24 a.m., and hoped to continue to Salisbury Plain and Brighton later in the day. He is not hurrying particularly now, as he has until Saturday to complete the course.

Mr. Cody reached Edinburgh at twenty minutes to nine on Friday morning, and later in the day flew to Stirling, where he arrived at ten minutes past eight in the evening. In spite of the shocking weather he was able to get on to Glasgow on Saturday morning, and then decided to have a rest. He was away from the Glasgow control at Paisley a few minutes after four on Monday morning, but came down at Lanark, and after a stop of over an hour got away again and reached Carlisle at twenty-five minutes past seven. He left Carlisle at half-past four on Tuesday morning, but the violent weather again impeded him, so that he landed at Whitehaven and stayed there until just on eight o'clock in the evening, when he set out again for Manchester, where he safely landed and decided to spend the night. He started again on Wednesday morning, and arrived at Bristol at a quarter to twelve. He announced his intention of proceeding on the next stage to Exeter, and then on to Salisbury Plain and Brighton during the afternoon.

the form of monoplanes, and the room was in other respects appropriately decorated illustrative of the event, Lieut. Conneau sitting to the right of the Chairman and Vedrines to the left.

After the loyal toasts had been honoured, Lord Northcliffe, in toasting Lieut. Conneau, recalled that it was only a few weeks back that M. Conneau had been welcomed in the same room to receive his well earned honours in connection with the Circuit of Europe. Lord Northcliffe, continuing, said that the Circuit of Britain reminded him somewhat of the Paris-Madrid motor race, and he thought the Circuit was almost as important as that epoch-making event whereby the future type of the motor car was fixed, as the Renaults, which then made the best travelling, were typical of the Renault taxicabs, which were seen in such numbers on the streets at the present time. In like manner to the Paris-Madrid race fixing the type of motor car, he thought the Circuit of Britain would fix the future type of aeroplane.

He admired M. Blériot's foresight and perseverance in perfecting the monoplane as against the biplane, which the Wright Bros. maintained was the aeroplane of the future. Although he was laughed at, he stuck to the type and perfected his model, with the result seen to-day.



CIRCUIT OF BRITAIN.—Vedrines "at rest" during his compulsory stopping time at Shoreham, before the last lap to Brooklands.

There were many people who said it was very wonderful all this flying, but what was the use of it? The same people said just the same thing in the past with regard to cars, but they had all proved wrong, and they would probably prove wrong again in regard to flying machines. In this connection M. Vedrines had reminded him of the use of aeroplanes in the recent French manoeuvres, which had entirely revolutionised warfare by the invention of machines that enabled an army to know what their enemy was doing and *vice versa*. The French nation were undoubtedly leading in this respect as they also led in regard to dirigibles. They were the only people who had invented an airship which had travelled at 62 k.p.h. and sailed out to its destination and returned again, as previously arranged.

People were apt to exaggerate the dangers of aviation, as they had exaggerated motor dangers, but in both cases the accidents were rather due to mistakes of inexperience than to defects in the machines. He hoped now that the practicability of the machines had been demonstrated, the Government and authorities would put themselves more into line with the French in the work of developing the science on practical lines. In happy words, Lord Northcliffe compared flying men, as typified by Lieut. Conneau

and M. Vedrines, who were working side by side in aviation. Conneau's science and naval training had served him in splendid stead, as, for instance, in the fog that they struck soon after the start.

Vedrines as the mechanic type was the heart of the whole movement as in the early car races. It was the marvellous and untiring vitality, mechanics, and judgment of what to do that enabled the Frenchmen to win nearly all the races. The makers, by working on tried lines, had evolved a really efficient flying machine, and the one thing they had still to do was to learn how to fly the machines slowly. He was happy to say that no accidents to speak of had occurred in connection with the Circuit, and the whole race had given magnificent evidence of the perfect organisation of the Royal Aero Club. Many difficulties stood in the way of aviation in England, not the least—prejudice to anything new. The French were always ready to investigate new ideas; in England anything new invoked the query "What's wrong with it?" The same occurred in the past with the screw, the iron ship, and many other innovations. In time no doubt that would be got over.

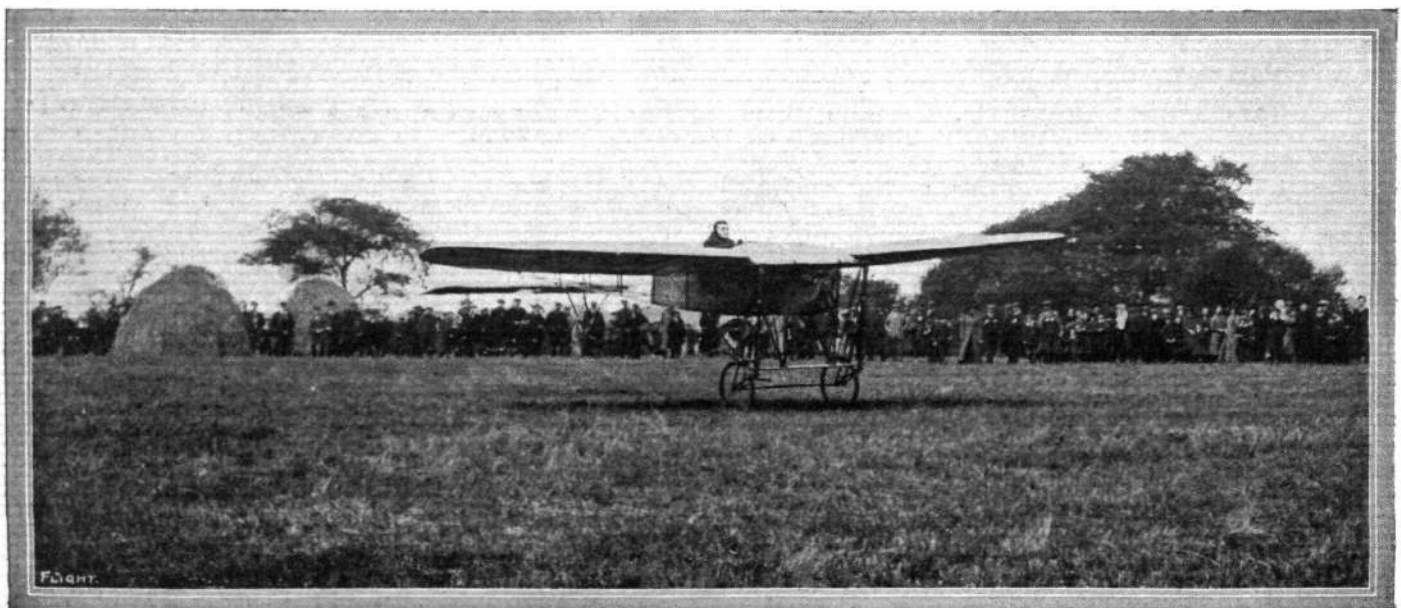
The great lessons taught by the Circuit had been the future type of machine which might be expected to predominate and that a scientific training was a huge advantage in the game. It behoved England of all nations to see that they utilised to the greatest the best scientific talent which they possessed to ensure the future paramount position in aviation.

Lieut. Conneau, in reply, spoke in English, and expressed his sincere thanks and admiration to the *Daily Mail* and Lord Northcliffe for their great help to aviation, and the Royal Aero Club for their splendid organisation of so difficult a circuit. By his reception by King George the previous day a great honour had been done to aviation rather than to him personally. Although the French, he said, commenced things, it was the English who in their practical way improved upon that work and perfected what they had commenced.

M. Vedrines, who spoke in French, had nothing but praise for his rival, in spite of the fact that he had done him so much monetary harm, although there was nobody by whom he would sooner have been beaten. They had flown over mountains, against wind and rain together, and had been at work from dawn until night time. He was not in the least envious, but at the same time he wished he had won the prize, for the sake of his little girl. As it was, he only wished to join hands with M. Conneau as brothers at the termination of their great journey.

M. Conneau also spoke further with similar sentiments, this time in French.

The toast of "The *Daily Mail*," coupled with the name of Lord Northcliffe, was proposed by Mr. Roger Wallace, K.C., and briefly replied to by Lord Northcliffe.



CIRCUIT OF BRITAIN.—Hamel leaving Chryston on his Blériot.



Lieut. Conneau and M. Vedrines, the two great rivals in the Circuit of Britain, at tea together at Hendon Aerodrome on Saturday last.

VEDRINES' BENEFIT AT HENDON.

BOTH from a financial and a spectacular point of view, Vedrines' benefit at the London Aerodrome was a great success.

It was a happy thought on the part of Mr. Grahame-White, this benefit proposal (although we should like to have seen it extended to some of the other very deserving pilots), and from the crowd that gathered to witness the flights one could readily estimate the amount of public appreciation Vedrines had earned by his plucky fight with "Beaumont" for the *Daily Mail* prize. No doubt Vedrines goes back to France with a better opinion of the English public's enthusiasm for flying than he possessed after his arrival at Hendon in the Circuit of Europe. Fully 50,000 must have witnessed the display, for not only were the enclosures comfortably filled, but every point of vantage in the district was black with spectators.

Vedrines' arrival from Brooklands on his Morane aeroplane just after 4 o'clock was received with rounds of cheers—and no wonder, for nothing could have been more appropriate for the occasion than this flight in reminiscence of his previous Saturday's display.

In spite of a tricky wind, which averaged 30 miles an hour, both "Beaumont" and Grahame-White flew magnificently. The former made use of Audemars' Gnome-Blériot with the "3" of the No. "13" painted on its wings obliterated in order to introduce a bit

more realism. The "Baby" flew particularly steadily, considering the velocity of the wind—this being undoubtedly due to the co-incidence of the centres of thrust and head resistance on this biplane of Grahame-White's.

After the flights, which were of the usual exhibition order, the three aviators were kept busy for some considerable time signing autographs.

The incident which led up to this occurred with great suddenness, changing a scene of utmost tranquillity into one of great animation.

"Beaumont" and Vedrines were seated at a table outside the refreshment tent. The aviators were conversing quietly together, and a throng of people had gathered silently around. Outside the ring an energetic compatriot of the two Frenchmen was disposing of picture post-cards, and his oft-reiterated cry, "Bo-mon Vedreen po-car" sounded monotonous in the hot air, when a little girl in white made her way quietly to the side of the aviators, and placed before each a post-card of himself with a copying-ink pencil, requesting an autograph. Instantly the scene was all animation. There was no longer any necessity for the post-card man to call out, a rush was made by all and sundry, including many French visitors who were there in honour of their countrymen. The aviators good-naturedly complied with many of the requests, whether in autograph albums, on post-cards, leaves from notebooks, and even white gloves, until they became so numerous that they were forced to flee.

During the afternoon Mme. Clara Butt presented to "Beaumont" and Vedrines, on behalf of the Aerodrome officials, silver cups in commemoration of the event. Whilst the presentations were made Vedrines held fast to a copy of *FLIGHT*, which later was taken care of by Mme. Vedrines, a *petite* lady in black. In addition to his cup, Vedrines "benefited" to the extent of over £800, proceeds of the afternoon's exhibition, including a cheque for 100 guineas presented by Mr. Mortimer Singer.

"Beaumont" Received by the King.

SINCE his accession to the Throne King George has shown in several ways his great interest in all departments of scientific progress, and it was therefore hardly surprising, although very gratifying, that he should send for the winner of the *Daily Mail* prize. In response to the King's message, Lieut. Conneau visited Buckingham Palace on Thursday morning, and on being conducted to the King's presence by Major Clive Wigram, the Equerry in attendance, spent some twenty minutes in describing to His Majesty various incidents of the flight.



VEDRINES' BENEFIT AT HENDON AERODROME ON SATURDAY LAST.—Vedrines receiving the commemorative cup from Mme. Clara Butt. Immediately beyond Vedrines are standing Mr. Harold E. Perrin, the Secretary of the Royal Aero Club (left), and Mr. C. F. Pollock, one of the Royal Aero Club Stewards. Note that Vedrines did not relax his hold of *FLIGHT* even when receiving the trophy.

"Beaumont" and Vedrines at the Crystal Palace.

ON Saturday evening both Lieut. Conneau and Vedrines were entertained to dinner by the Terrace Club at the Crystal Palace, and afterwards in the Concert Hall Lieut. Conneau was presented with a gold cup and a cheque for £50 given by the Perrier Water Company for the first Frenchman to arrive in the race, while a gold medal was given to Vedrines. The presentation was made by Lord Plymouth, who also presided at the dinner, when he was supported by Lord Kinnaird, Sir R. Melvill Beachcroft, Capt. Pumperneel (French Naval Attaché), Mr. Roger Wallace, K.C., Mr. T. Marlowe, Mr. C. Grahame-White, &c.

"Beaumont" in Paris.

ON his return to Paris, on Monday, Lieut. Conneau was entertained to lunch by the staff of the Paris *Daily Mail*, and among those who assembled to do honour to the victor were the Hon. L. Carnegie, representing the British Ambassador, Sir Henry Austin Lee, General Roques, M. Lepine, Lieut.-Col. Bouttieaux, Mr. Dick Farman, Count de la Vaulx, M. Louis Blériot, Count Lambert, Mr. Lane and Mr. Storey, of the Paris *Daily Mail*, as well as many representatives of the naval and military authorities, including representatives from the various Government flying schools.

More Solatiums for Vedrines.

ALTHOUGH he missed getting the chief prize, Vedrines' efforts in the *Daily Mail* Circuit of Britain have not by any means gone unrewarded. In addition to the £200 presented to him by Lord Northcliffe, he has received a cheque for £1,000 from that good sportsman, Mr. James Elliman, of embrocation fame, while the



CIRCUIT OF BRITAIN.—How some enthusiasts managed to see the aviators at Manchester.

subscription started by the *Financial Times* has realised over £183, and a further £4 given by the Comtesse de la Field brings the total he has received to over £2,000.

NOT ONE TYPE BUT TWO TYPES.

By G. HOLT THOMAS.

THE success of the monoplane has led to the belief on the part of a great many people that this type of machine is the only machine likely to exist in the near future. Those, however, who have laid down this law, based on the winning of the *Daily Mail* Circuit of Britain, have forgotten to include in their hypothesis the personality of the pilot. I readily grant that the biplane could have had no chance of winning. I also grant that no biplane would have stood the wind and weather encountered. But on the other hand, no machine, whether biplane or monoplane, would have won through, unless piloted by a "Beaumont" or a Vedrines. The monoplane has astonished me in the last year by its strength of construction, as shown by the tests to which it has been put, and is constantly removing one of the arguments against it. Needless to say, it will face much more wind, on account of its extra speed, but it still requires an "artist" to land on it, and in no body of men will one find more than a certain percentage who are fit to pilot a fast monoplane. The biplane is not devoting itself to speed, but it will carry much more weight. It is slow, and therefore more liable to buffeting in a gale, but it has its uses and its advantages not possessed by its rival. The French Government knows as much about aviation as most people, and it is constantly taking delivery of both types of aeroplanes. Lieut. Conneau is an exceptional man, and for that reason won

the *Daily Mail* £10,000, and could not, undoubtedly, have won it on a biplane, but there is no reason to bury the biplane on that account. If we have say 100 officers to teach, a certain percentage will be fit to fly fast monoplanes and a certain section will never be fit, however much they are taught. They will, however, be able to manage a biplane in a moderate wind. I know many pilots whom I would advise to stick to the biplane, others who admittedly are fit for a monoplane. The winning of this race I put down to the men, and as some proof I may mention that I was able to send an exact prediction of the result, "Beaumont" 1, Vedrines 2, and the rest nowhere," to the *Daily Mail*, and in fact I gave "Beaumont" a marked copy of the *Daily Mail* to carry round the circuit, as I was convinced he would be the winner. Another proof of the man was his magnificent flights in a very nasty wind on Saturday at Hendon on No. 13, Audemars' machine, on which he could not start in the race. I think we should realise that although "Beaumont" could not have won on a biplane, that on the other hand, the number of "Beaumonts" is very limited, and consequently we must cater for the average men as well as the exceptions. I have accepted Lieut. Conneau's invitation to fly with him to the French manoeuvres, but because he is "Beaumont," and I have tremendous confidence in his skill, and not in any way because he is flying a monoplane.



The heading of the *Daily Mail* carried 1,000 miles round Great Britain en aeroplan by Lieut. Jean Conneau ("Beaumont"). The original was given to Lord Northcliffe as an interesting souvenir of the Circuit.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, the 1st inst., when there were present:—Mr. R. W. Wallace, K.C., in the Chair, Mr. Ernest C. Bucknall, Prof. A. K. Huntington, Mr. F. K. McClean, Mr. J. T. C. Moore-Brabazon, Mr. C. F. Pollock, and Harold E. Perrin, Secretary.

New Members.—The following new Members were elected:—Hon. Richard Bethell, Sydney Brookfield, Lieut. Alec Burchardt-Ashton, Mrs. Beatrice Osborn Burke, C. Capron, George Vyvyan Deakin, Theo. Feilden, Hamilton Fyfe, Alexander Gross, C. T. Hill, Henry H. Hart, Col. T. Jermyn, F. W. Pethick Lawrence, Beaumont Pige Leschallas, W. Murray Morrison, Collyns Price Pizey, Panajotti Teofani, and Baron E. von Ofenheim.

Aviators' Certificates.—The following aviators' certificates were granted:—

109. Harry Bingham Brown (subject to sanction of Aero Club of America).

110. E. F. Driver.

111. Norman Scott Percival.

112. Walter Oswald Watt.

113. Walter Lawrence.

Gordon-Bennett Aviation Cup.—The entry fees and forfeits in connection with the above contest have been divided as follows:—

A. Leblanc... £120 E. Nieuport... £80 A. Ogilvie... £40

"Daily Mail" Second £10,000 Prize.—The formal award of the prize of £10,000 to Lieut. Conneau (Monsieur A. "Beaumont") was confirmed. The particulars of the other prize winners in this competition will be announced later.

HAROLD E. PERRIN,
Secretary.

166, Piccadilly.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

NOTE.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary. We would ask Club Secretaries in future to see that the notes regarding their Clubs reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.

Clapham Ae.C. (23, CHATHAM RD., WANDSWORTH COMMON).

THE club has now removed its workshop to 23, Chatham Road, Wandsworth Common, and anyone wishing to join should communicate with H. Coomber, hon. sec., at the above address, when he will be glad to send full particulars.

Eastchurch Model Aero Club.

THE above club has been formed at Eastchurch and already numbers sixteen members. Dealers in materials for making model aeroplanes are asked to kindly send catalogues, &c., to the secretary, the Post Office, Eastchurch.

Leamington Model Aero Club (88-90, PARADE).

THE club is making good headway, and it has been found necessary to take up larger quarters at 88-90, The Parade, where the club's headquarters and workshop are now situated. Already a number of models are in course of construction, and short flights were achieved by Mr. C. Farie's "Red Plane," and by Mr. W. Womersley's monoplane. A model flying competition has been arranged for September 9th, and entries should be sent in at once to the secretary, M. J. F. Miller.

Parkside Aero Club (2, EDBROOKE ROAD, PADDINGTON).

LONDON aero enthusiasts have now a school for gliding and aeroplane experiments as a result of last Monday's meeting of the above club. Only a few more members are required, as it was decided to limit the membership. The subscription was fixed at 25s. yearly, payable as 5s. entrance fee and 5s. per quarter. The club have acquired a glider, and will possess a full-size machine very shortly, so that members will have the opportunity to learn flying in all its branches. Interested readers are requested to communicate with the secretary, 2, Edbrooke Road, Paddington.

Sheffield Model Aero Club (35, PENRHYN ROAD).

A MODEL flying competition is to be held on August Bank Holiday (Monday), in the field adjoining Wadsley Church, Marcliffe Road, off Wadsley Lane, Hillsborough Car Terminus. Flying will commence at 2.30 in the afternoon. The following events have been arranged:—1, for models rising off the ground under their own

power, prize 2s. 6d.; 2, longest distance flown, bronze medal; 3, duration, bronze medal; 4, height, silver medal; entrance fee for each event 2d. each for members, and 6d. for non-members. No competitor will be allowed more than two models in each event, and each competitor will be allowed three tries in each event. Those wishing to take part in the competition may do so on paying entrance fee up to 2 o'clock on the field on the day. All entries to be made to the secretary, C. F. W. Cudworth, 35, Penrhyn Road.

Southsea Aero Club (2, SHIRLEY ROAD, SOUTHSEA).

AN essay competition will be held next week. The competitors will be allowed to write on any two of six given subjects, the best one only to count. Will members on their holidays kindly write the secretary for information? Members are requested to send in plans and suggestions for the glider. If any reader of FLIGHT would like to join, will he please write the secretary at once, as very shortly an entrance fee will be charged.

SCHOOL AERO CLUBS.

Arundel House School Ae.C. (15, ARLINGTON ROAD, SURBITON).

ON Saturday, the 29th ult., R. F. Mann took part in the model aeroplane contest organised at Mitcham Common by the Aero Models Association, where he was awarded the first prize for duration. In the course of one of his trials for that event, the Mann monoplane No. 49 (similar in type to the No 31. recently described in FLIGHT) made an absolutely straight flight of 2,535 ft., or nearly half a mile. The distance was carefully measured by Mr. F. W. Jannaway, of 48, Totterdown Street, Tooting, and constitutes a world's record.

Southgate County School Ae.C. (FOX LANE, PALMER'S GREEN).

A MODEL aero club was started at the above school in the early part of last month, and the membership is already 25. The first flying meeting was held on July 27th. Nine models were entered, with the following result:—1. E. R. Brown, 435 ft.; 2. V. A. Edwards, 187 ft. The secretary, E. R. Brown, would like to receive catalogues, &c., from model firms, at his address, 84, Bowes Road, Palmer's Green, N.

Experiments in India.

MR. H. S. WILDEBLOOD, whose article on "Experiments in Rajputana," which appeared in our issue of June 24th, will be remembered, writes us that the full-sized machine has now been completed by the Upper India Motor Co., of Lucknow, and has been taken to the parade ground of the cantonment for its trials. It is 46 ft. span and fitted with a 35-h p. J.A.P. Mr. Wildeblood says his latest trouble, besides the heat, which has been very trying, is a boring insect which has got into some of the bamboos, in spite of the preservative with which they were painted.

An American Hydro-Aeroplane Pilot.

OFFICIAL trials were carried out at the beginning of July on Lake Keuka, at Hammondsport, N.Y., with the hydro-aeroplane built by Glenn H. Curtiss for the U.S. Navy. The machine is on the usual Curtiss lines but fitted with floats, and Lieut. Ellyson, U.S.N., successfully qualified for his pilot's certificate on the machine, rising from and coming to rest on the water. It is arranged to carry passengers, and is fitted with double control, so that either of the two officers on board can act as pilot. Voyages up to 50 miles in extent have already been made.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Flying Ground, Eastchurch.

IN consequence of the absence of the aviators officiating in the *Daily Mail* Circuit of Britain, there was no flying here in the early part of the week. During Thursday most of them returned, and Lieuts. Samson, Longmore, and Gerrard all put several good flights to their account. The two first named each covered the greater part of the island in their travels, and delighted the holiday makers at Sheerness by flying the length of the promenade at some distance from the coast, rounding Garrison Point, and passing over several vessels lying at anchor in the harbour. Lieut. Gerrard, on one of his flights, journeyed over to Sittingbourne and back, whilst Lieut. Samson wound up by carrying Mr. Travers out to Shellbeach and back.

Lieut. Samson was up betimes on Friday morning, putting up a splendid flight before 7 a.m., in which he passed over practically every village on the island. The maximum height attained was 2,500 ft., and the average 1,500 ft. In the evening all four officers were again out on the Short machines for about two hours, getting in a lot of useful practice.

Lieuts. Samson and Gerrard were out before six on Saturday morning, and were flying until 7.45, when they adjourned for breakfast. About noon Mr. Ogilvie came out for a flight on the N.E.C.-engined "Baby" Wright, going well in a rather puffy wind. In the evening there were four machines busy at the same time; Mr. F. K. McClean, just returned after six months absence abroad, demonstrated that he had lost none of his skill, for although the Short biplane which he piloted on this occasion was somewhat different to what he had previously been using, he made several good flights over to Leysdown and Eastchurch during the evening.

All four Naval officers also put in their usual spell of good work, and Lieut. Dunne, on his monoplane, made his first circular flight on this machine. Starting from his shed, he flew at about 40 ft. in the direction of Leysdown, making a good left-hand turn, and landing neatly, close to his starting point, to the applause of the onlookers. Whilst flying was in progress, a thunderstorm broke over the island with alarming suddenness, and Mr. McClean and Lieuts. Samson and Gregory, who were out at the time, had to return hastily to the aerodrome, where they landed in safety. Some idea of the rapidity with which the storm broke may be gathered from the fact that the wind rose at a bound from "dead calm" to 30 m.p.h., as recorded by Dines anemometer, the force of the wind at 500 to 600 ft. approaching 60 or 70 miles an hour. The wind was accompanied by thunder and lightning and enormous raindrops.

On Sunday evening Mr. McClean was again out, making several good flights in the vicinity of the aerodrome. Mr. Whittaker was seen in the air for the first time on his 50-h.p. Gnome-engined Farman biplane, on which he made several straight flights. Prof. Huntington was also out on his biplane making straight flights. Mr. F. K. McClean, with Lieuts. Gerrard and Gregory, all on Short biplanes, were taking their morning appetisers between 4 and 6 a.m. on Monday, all going well. Mr. Whittaker was also out again practising on his Farman.

In the evening the aerodrome was once again visited by T.R.H. Prince and Princess Louis of Battenberg, Princess Henry of Prussia, Princess Louise and Prince George of Battenberg, accompanied by Ladies-in-Waiting. The Royal party were received at the entrance to the aerodrome by the Naval officers, who conducted them to the

flying enclosure. During a stay of over two hours the Royal visitors witnessed some remarkably good exhibition flights by Lieuts. Samson, Longmore, Gerrard and Gregory on the Short Naval machines, and also several passenger flights.

To the four Naval officers fell the honour of being the first British aviators to pilot machines carrying Royal passengers: Lieut. Samson took up Princess Louis of Battenberg, Lieut. Gregory was accompanied by Princess Henry of Prussia, and Lieuts. Longmore and Gerrard carried, respectively, Princess Louis of Battenberg and Miss Kerr, chief Lady-in-Waiting to Princess Louis of Battenberg. The flights were of about 15 mins. duration each, and the approximate height 500 ft. Their Royal Highnesses were delighted with their trip.

Mr. F. K. McClean, on his Short biplane, and Mr. Alec Ogilvie, on the "Baby" Wright, gave additional "life" to the scene by some good exhibition flights.

On Tuesday morning, Mr. Whittaker's Farman was out, piloted by Mr. Travers, who gave quite a good account of himself in the course of a twenty minutes' flight, making circular flights and figures of eight at a height of about 40 ft.

On Tuesday evening, H.R.H. Prince George of Battenberg, accompanied by his younger brother, again visited the Aerodrome, spending a considerable time in a close examination of the Short machines, in which he manifested a keen interest.

Brighton-Shoreham Aerodrome.

ON Monday last Mr. Barber left Brooklands with a passenger in the morning on a Valkyrie intending to fly to Shoreham. He decided to come down near Steyning owing to slight engine trouble, but unfortunately in alighting he damaged the chassis. After putting this right he arrived at Shoreham at five minutes to eight in the evening.

Next morning Mr. Barber left with passenger about 8 a.m. to fly back to Brooklands.

There is a prospect of good sport on Saturday, August 12th, as at a meeting last week of the Dieppe Corporation it was unanimously resolved to co-operate with the Brighton-Shoreham aerodrome for a cross-Channel contest on that day. A sum of £400 has already been promised.

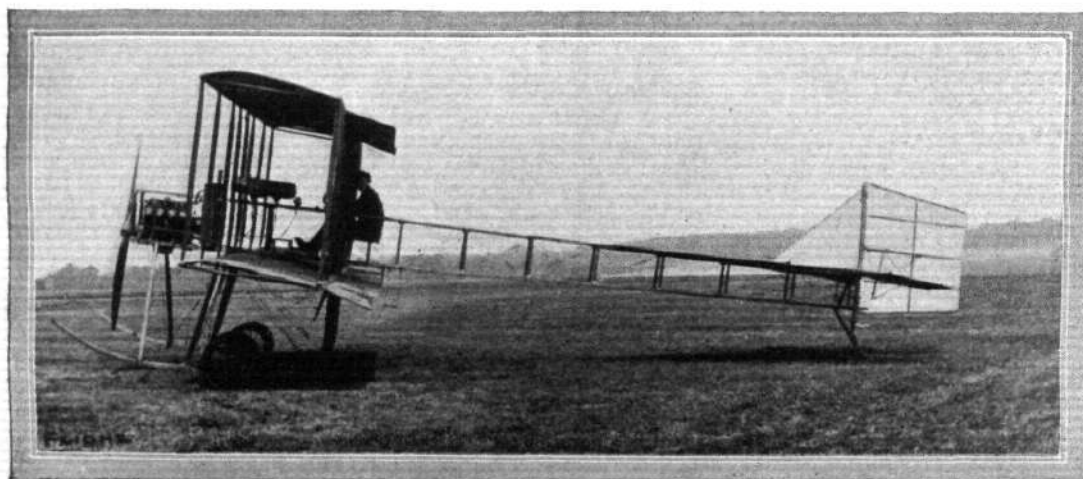
Brooklands Aerodrome.

THE expectations of finishing the Circuit of Great Britain on Wednesday last week, as is known, were realised at a little after 3 o'clock, when Andre "Beaumont" made a perfect descent, and appeared to be as fresh as when he started. His time from Brighton was 39 mins. 51 secs. Jules Vedrines arrived at 3.19, his time from Brighton being 36 mins. 45 secs. Each received a vociferous welcome, both Lord and Lady Northcliffe being at the head of a representative crowd interested in aviation to welcome them, for the time all attention being concentrated on the heroes.

Later Mr. Percival was out on the Billing biplane. Mr. Johnstone had arranged to visit Weybridge Regatta by way of the air, and was just on the point of rising when a wire snapped, taking several pieces out of the propeller. Mr. Cecil Pashley, out on Mr. Lane's monoplane, had a bit of a spill as, under the impression he was near the ground, he stopped his engine and pancaked, damaging the under-carriage.

No flying was indulged in on Thursday. Mr. Pixton, who returned during the day from Harrogate, was walking a little limp. The statement that he had broken his finger is not correct, his hand is only nastily cut. By all accounts he was doing well in the Circuit Race to within 3 miles of Harrogate, when owing to his running short of petrol the engine stopped, as luck would have it at an unfavourable place, and he had to land the best way he could. It was very galling to him presently when "Beaumont" and Vedrines passed overhead.

At mid-day on Friday Mr. Rowe had the Vickers-R.E.P. out for a short period. Mr. Pixton, although still very stiff from his accident, took out the Bristol School biplane, but the wind freshening he decided to return to the shed.



Mr. Percival in the pilot's seat of the Billing biplane at Brooklands, on which he has just obtained his pilot's certificate.

At 3.40 on Saturday, Jules Vedrines left for his "benefit" at Hendon. He appeared to have a little trouble in getting away, once turning back as if beaten. After manœuvring round for a good "road," he eventually went off on a very rough passage, flying, for him, rather low.

In the afternoon of Sunday, the first out was Mr. Pixton, he also again taking up a passenger and flying out over Weybridge and district, on his return giving a fine exhibition of banking and smart landing. Mr. Johnstone was doing some steady flights at 1,000 ft., and later carried some passengers.

A passenger-carrying Nieuport has now arrived, and Mr. Chevalier, who is piloting the machine, was out for a trial flight, making some very rapid circuits. The speed of the machine being so great, passengers will be taken for cross-country flights, the Aerodrome being used only for getting up and landing. Mr. Chevalier with a Nieuport, it will be remembered, was one of the reserve pilots representing France in the Gordon-Bennett Race.

Early on Monday morning Mr. Astley arrived at Brooklands on the Birdling monoplane, having flown from Nottingham to Windsor and from there to Brooklands, arriving about 7 a.m. The wind, which had been rising, finished up by blowing half a gale all day, later, about 7 p.m., to subside to a perfect calm. Some interesting flying was then seen on new machines.

Mr. O. de Montalent was first out with the Breguet biplane, making a fine flight, he afterwards going up with a lady passenger and almost disappearing beyond the railway at 2,000 ft. up.

Lieut. Watkins' work upon the Vickers monoplane is getting better and better. After making several finely controlled turns at 200 ft. he took up Capt. Maitland as passenger, with equally good results.

Henri Pequet was up on Mr. Spencer's biplane, which has just been fitted with a new Gnome engine, making a good ten minutes' flight at 1,500 ft., after which he took up Mr. Spencer as passenger. Mr. Flanders' new monoplane was another of the machines out for its trial flight. Mr. E. V. Fisher was piloting with considerable skill, and after a few intermittent flights, she steadied up splendidly and exhibited a fine turn of speed.

Lieut. Watkins was again out on the Vickers-R.E.P., taking with him a lady passenger, and flying with consummate skill for ten minutes. This is the machine destined for the South Pole Expedition, in which it is proposed Lieut. Watkins shall pilot the machine in the final dash for the Pole.

Last out during the evening was Mr. Spencer on his biplane, he being well pleased with its work.

Wind and rain up to four o'clock interfered with work on Tuesday, but then the air cleared and the sun shone forth. Mr. Chevalier was soon out with the Nieuport, making very fast flights, and at the same time Mr. Napier, a pupil, who only recently obtained his certificate, was flying his racing Bristol. It did not appear to be doing very well, he landing first on one wheel and then the other during the first flights. Later, when taking up a passenger, when banking for a spiral descent, a sharp gust caught the machine, and heeling her right over before the pilot could recover, she "side-slipped" to the ground. Unfortunately, the engine broke away by the impact, and struck Mr. Napier, injuring him fatally. His passenger was thrown clear of the debris, and thus escaped with severe shock.

6.45 p.m. In the Air Hendon.

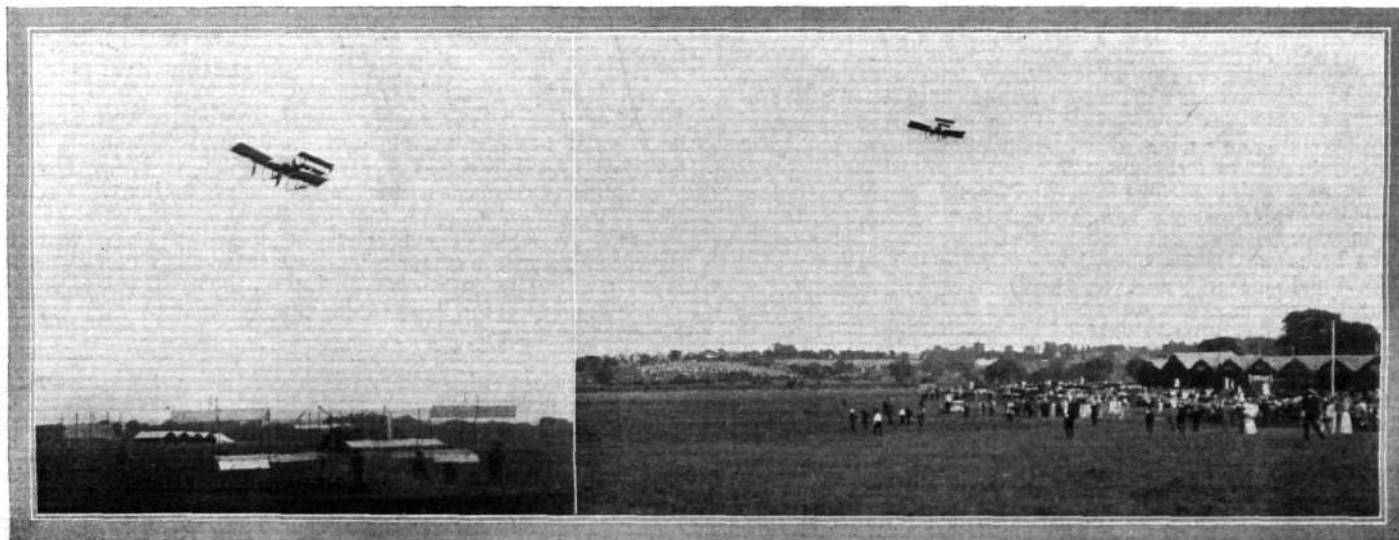
I'm in a Valkyrie monoplane
pilot Mr. Barber, 300 ft high
at moment of writing - going
higher - never felt so happy in
my life. Exhibition interest in
"the sport" flying 500 ft high
Harrison well in sight, Whiteley
on left hand. Possibly stream in air
pilot on left. Smoke has streaming
wind always very hot - yesterday
8 p.m. Ship appears sticking
to the grass right side of road
ark foot 2000 ft high, 100 ft
going down. winding 600 ft
Speed over 60 miles an hour
Thames & Hawks Jarvis

The story of a first flight, as recorded by Miss E. T. Davies whilst in the air on a Valkyrie monoplane.—The above is a facsimile reduction of the original notes made by Miss Davies.

London Aerodrome, Collindale Avenue, Hendon.

Blériot School.—From Monday until Wednesday last week the School was closed by reason of the Circuit of Britain.

On Thursday the weather was against flying most of the day, but late in the afternoon Mr. Dyott was able to cover two circuits, and Capt Hamilton made some straight flights. Next day was too windy for air work, but Saturday opened brightly, and Mr. Dyott qualified for the first test for his *brevet*, before the wind got too



During the wait for the start from Hendon for the Daily Mail Circuit of Britain Mr. H. Barber made some very fine exhibition flights on his Valkyries, attaining a height of 2,000 ft., a flight also being made with a passenger. Our photographs show Mr. Barber in flight, and the right-hand picture gives a good idea of the crowds in the distance.

strong. Meanwhile Capt. Hamilton, who has been improving very rapidly, was making some straight flights, and Mr. Slack indulged in some rolling practice.

On Monday last Mr. Dyott qualified for the last tests for his *brevet*. He is a very keen and careful pilot, and handles the Blériot machine with considerable skill, his descents *en vol plané* being particularly worth watching, along with his delicate landings.

In the evening Capt. Hamilton was making a few good circuits round the aerodrome, and the other pupils were also practising on the School machines.

Valkyrie School.—Mr. Barber, on Tuesday last week, had out one of the "Type B" military monoplanes fitted with a 50-h.p. Gnome engine, and made a very pretty flight of about twenty minutes duration, during which an altitude of about 1,200 ft. was attained, and various evolutions carried out. Mr. Newman, of Cambridge, had a passenger flight, and expressed himself as delighted.

Next day Mr. Barber was out again with the same machine, giving Mr. G. Nicholson, of the War Office, an extended flight at a good altitude. The latter end of the trip was made during a thunderstorm, but the machine behaved with remarkable steadiness. Heavy rain then commencing, a descent had to be made. In the evening the Valkyrie School pilot was out and put up a very interesting exhibition for a cinematograph firm, later on Mr. Andrews having a passenger flight.

Mr. Scott Brown ascended on one of the machines with his cinematograph apparatus on Thursday, and made an extended flight over the surrounding district. Quite a tricky wind was blowing, but no difficulty was experienced in handling the apparatus, although it was Mr. Scott Brown's first experience as a passenger. In the afternoon Mr. Barber ascended with Miss Eleanor Trehawke Davies as a passenger, and quickly ascending to a height of 600 ft. or 700 ft. made a fine cross-country flight in the direction of Harrow, from there towards Ealing, over Hendon and the "Welsh Harp," and back to the aerodrome, by which time the machine was at an altitude of about 2,000 ft. A fine *vol plané* descent was made, and at the expiration of the flight great interest was taken in an account of the flight which Miss Davies had written while in the air. The writing was quite clear, and a facsimile reproduction of the account appears elsewhere in this issue. Several other passengers were then taken up, and also a fine exhibition of figure flying carried out, including numerous spiral *vol plané* descents and sharp right- and left-hand turns.

Miss Davies, whose flight the preceding evening had filled her with great enthusiasm, arrived on Friday at the aerodrome soon after 5 a.m., and quickly ascended to a height of over a thousand feet, when another magnificent cross-country flight was made over and past Harrow to the Thames, returning to the aerodrome with Ealing, Acton and the White City on the right. It was a glorious morning, and only those who have experienced cross-country flying in perfect weather can understand its exhilaration. Several other passengers were then given flights at altitudes ranging from 200 ft. Mr. Barber flew altogether about 2½ hours. The Valkyrie was very strong on the wing in the evening, Mr. Cobb, weighing about 14 st., ascending as a passenger, and the tanks holding sufficient oil and petrol for a 90 mile flight. The machine lifted easily, and with the extra weight was steadier than ever, and also seemed to be somewhat faster. Mr. Cobb was delighted, and, like many others, he is now determined to take up cross-country flying. Several other passengers ascended, and Mr. Barber also made a fine solo flight in his usual excellent style.

The Valkyrie was out again next day, this time Mr. W. Ridley-Prentice ascending as a passenger, for a cross-country flight of about ten or twelve miles. Mr. Ridley-Prentice weighs about 12 st., and with the fuel tanks full, no difficulty was experienced in rising to a height of 2,000 ft. Mr. Newman also had a further experience in an extended flight. Mr. Barber was also flying for over an hour.

Miss Trehawke Davies showed renewed enthusiasm by arriving at the Aerodrome at 5 a.m. on Sunday, for another flight just as the Valkyrie machines were being brought out of the sheds, but owing to a very gusty wind Mr. Barber remained within the limits of the aerodrome, making several circuits. Later Capt. Loraine was taken for a short flight. Though the anemometer registered 22 to 25 miles an hour, Mr. Ridley-Prentice was taken up to an altitude of 100 ft., making two circuits. Mr. Ridley-Prentice, who recently qualified as a pilot on a Farman machine, on descending, commented on the remarkably slight movement of the controls required to meet the strong gusts encountered on the trip. The wind remained high all day till 7 p.m., when Mr. Barber gave another fine demonstration, flying for 1½ hrs. altogether. Extended flights over the surrounding country in every direction were given to Miss Meeze, Mr. Livingston, and Mr. Ridley-Prentice at various altitudes to 2,000 ft.

Salisbury Plain.

THE expected arrival of the competitors in the *Daily Mail* Circuit of Britain on Tuesday and Wednesday of last week caused the Plain to be invaded by a large crowd of people, and on Tuesday it was estimated that the number present was between 2,000 and 3,000. In the morning Mr. Fleming gave several exhibition flights on his Bristol biplane, and his sharp turns, switchbacking and *vol planés* with both hands off the lever evoked loud applause. Both he and M. Jullerot were continually giving lessons to the Bristol pupils, and as the crowd increased during the day they were kept interested by further exhibition flights. A large proportion of the crowd spent the night on the Plain, and members of the Bristol School were out the next morning at 3 a.m. giving exhibition flights. Up to 6 o'clock M. Jullerot was giving lessons to pupils, and then took up the *Daily Mail* correspondent with a view to looking for "Beaumont" and Vedrines. After circling around the Plains for an hour at a height of 2,000 ft., during which Vedrines had landed, "Beaumont" was sighted. They at once headed off to meet him, and came down at half-past eight, by which time M. Jullerot's total time in the air for the several flights amounted to four and a half hours. Mr. Fleming during this time gave several exhibition flights, one concluding with a spiral *vol plané* from a height of 1,500 ft. As soon as Vedrines was sighted he went off to meet him, and escorted him in.

On Thursday the instructors were again busy with the Bristol pupils, Capt. Watt flying to West Down and back. In the evening M. Jullerot took five different pupils for passenger flights, and Capt. Watt made the first tests for his certificate. Mr. H. Busted and Mr. Fleming were both instructing pupils, the latter taking among others Prof. Petavel.

On Friday the proceedings again started at 3 a.m., and M. Jullerot gave several of the pupils half an hour's flight. Capt. Watt completed his tests for his certificate by 8 o'clock. M. Jullerot started off with Prof. Petavel and covered 40 miles across country in one minute over the hour. Later in the day M. Jullerot, Busted and Hotchkiss were busy giving instruction, and after a final lesson from the last mentioned Mr. Lawrence started off his *brevet* tests and completed them satisfactorily in 23 minutes, a result on which he was warmly congratulated. A very fine exhibition flight was made by Mr. Busted, the banking at the turns being very sharp. Captain Fulton was also out and made one or two useful flights on one of the Army machines.

On Saturday the work was of the usual school order, although there was a good deal of wind, one of the most notable trips being that made by M. Jullerot with Capt. Stewart when the wind was blowing 25 miles an hour. On Sunday the wind was too rough for air work, but M. Jullerot had his machine brought out, and made a short flight to please the crowd.

On Monday the proceedings were opened by Mr. Busted, who was followed by Mr. Fleming and M. Jullerot, each of them giving lessons to pupils. Col. Smeaton also made two useful circular flights. In the evening Messrs. Jullerot, Fleming, Busted and Hotchkiss were all giving lessons, while M. Jullerot put a new Renault-engined Bristol through its paces during a 30-minute flight, after which it was handed over to the Air Battalion. Col. Smeaton also made a good flight round the camps, while Prof. Petavel progressed as far as straight flights. Tuesday was too boisterous for flying and so work was confined to the sheds.

"FLIGHT" IN PARLIAMENT—ITS UP-TO-DATE INFORMATION.

MR. SANDYS asked the Under-Secretary of State for War whether, in view of the fact that it was recently officially stated, with reference to the reported construction of a new Army biplane, that certain experiments were being made, but that it was not desirable to give any particulars, he is aware that, in an issue of *FLIGHT*, photographs and drawings purporting to represent the biplane appeared, together with a detailed description; whether these are in fact photographs of the biplane, and if so why information should be given to the Press which cannot be communicated to the House of Commons.

Colonel Seely said the occasion referred to was an experimental one, with the view of obtaining information on some points for the Advisory Committee. In no sense was the machine a new Army biplane; no information on the subject had been given to the Press, and it was not known how the information had been obtained.

Mr. Sandys asked why such information should have been allowed to leak out.

Colonel Seely said he had read the articles. He was in a position to say that none of the information given to the Press was of a confidential nature. He was inquiring how this communication to the Press came to be given, and he would certainly deal with it.—*Westminster Gazette*, July 25th.

TERRITORIALS AND AIR WORK.

By "SAPPER."

THE London Balloon Company, R.E. Territorials, have just concluded their annual training at the Balloon School, Farnborough, and some highly-instructive work has been got through. Several ascents have been made in captive and free balloons and Cody's war kites. On Saturday, July 22nd, the Company proceeded by road to Basingstoke, carrying full equipment, to give a demonstration of observation work under service conditions. Some highly-important information as to the enemy's position, scouts, number, &c., was obtained.

The Army airship "Gamma" has been taking advantage of the good weather and put in some excellent trips, some as early as 3 a.m. At many of the journeys the London Balloon Company have assisted the Regular Air Battalion in the handling of the airship, some useful airship experience being thus gained for the first time.

On Friday, July 28th, owing to the kindness of Lieut. Ridge and Mr. De Havilland, the N.C.O.'s and men of the Company were taken, one at a time, for a 3-mile trip in the De Havilland biplane, Mr. De Havilland himself piloting the machine.

These passenger flights were very much enjoyed by all of us, and lasted about five minutes each.

A slight tribute here to the De Havilland biplane may not be

amiss. It is now of the 0-2-P-1 type (originally 1-2-P-1, but since the front elevator was dispensed with has flown much better and faster), is fitted with a 50-h.p. De Havilland engine and a De Havilland propeller. It is worth while noting that the machine has been designed, built and flown entirely by Mr. De Havilland, even down to the engine and propeller, and is not an imitation of other people's work.

During the day Mr. De Havilland was flying for about four hours, only coming down to refill petrol tank and radiator or to take up a fresh passenger. During all these flights not one single accident or breakage occurred to the machine and every flight was finished with a fine *vol plané*, sometimes not switching on engine when landing.

Another good point, although the weight of passengers varied from 9 to 13 stone, no adjustment was found necessary, nor even when flying without passenger. The speed of the machine under test is: slowest, 32 m.p.h.; fastest, 41 m.p.h.

By way of conclusion, a good, strong and reliable aeroplane is just the thing needed by the Company, and would make a very welcome present to the London Balloon Company, R. E. Territorials. Will somebody assist them to their desires?



OUR AVIATRESSES.

Is it not curious that with practically one exception, that of Miss Edith Meeze, at the Valkyrie school, all our English lady enthusiasts who are seriously taking lessons in flying should be drawn from the ranks of the married.

One is almost led to infer that matrimonial bliss has the effect of strengthening the feminine nerves and of endowing considerable courage.

Mrs. Hewlett, who, in partnership with M. Blondeau, has directed a most successful flying school at Brooklands during the past twelve months, is rapidly becoming an efficient pilot of the Farman biplane. She has already flown many circuits and it should not be long before she obtains the coveted *brevet*.

It was a pity that Mrs. Martin could not remain long enough in England to complete her course, as, under her husband's tuition at the Grahame-White school, she proved a most apt pupil.

So proficient was she that on the morning she sailed for America she circled the London Aerodrome twelve times on the school Farman.

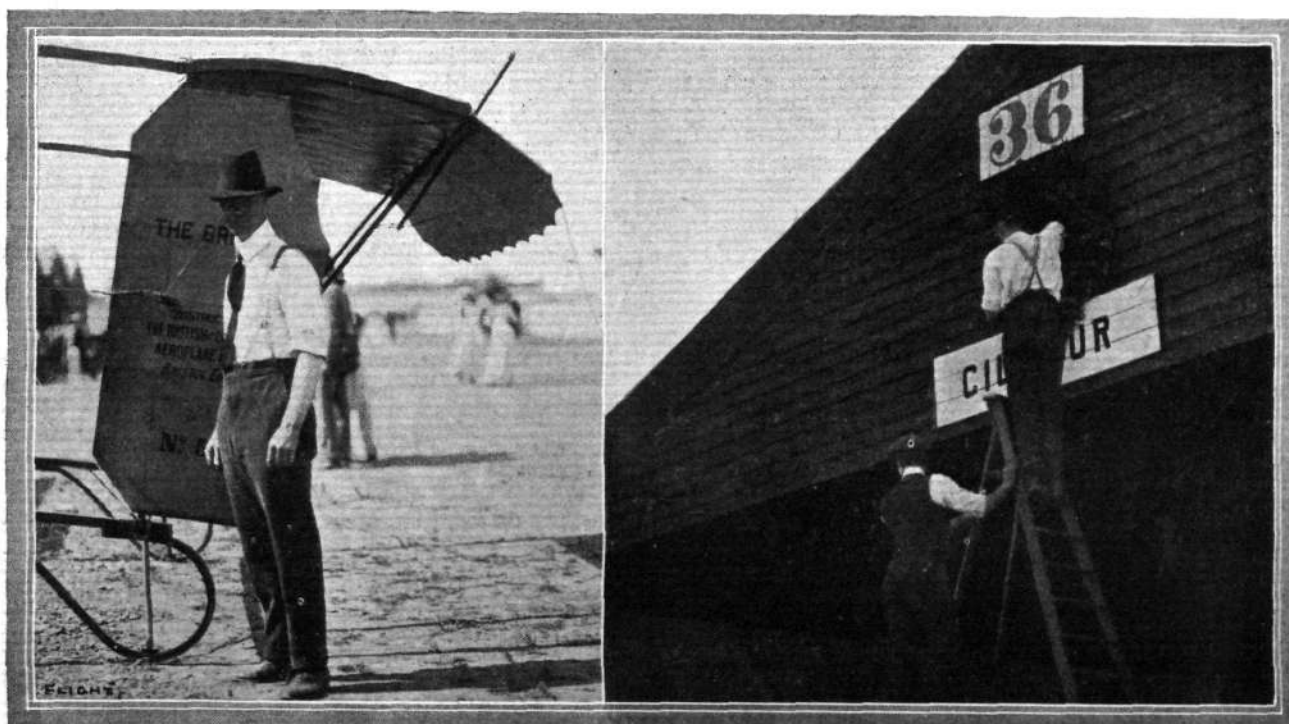
Mme. Franck will be remembered as the aviatrix who unfortunately met with an accident while giving an exhibition at the Boldon racecourse.

Although bearing a foreign *nomme de guerre* she was of British extraction, being the wife of an English journalist resident in Paris. Her experience was gained with Henry Farman at Mourmelon, and although she had made several good flights over the flat plains around the Camp de Chalons, she had hardly advanced sufficiently to attempt an exhibition over a racecourse bristling with obstacles.

Mrs. Palmer commenced her tuition at Lane's gliding school, but she has now graduated to the Martin-Handasyde.

The latest addition to the ranks of lady pupils is Mrs. D. de Beauvoir Stokes, a keen motoring enthusiast, who is learning to fly a Farman at Grahame-White's Hendon school.

She is possessed of indomitable pluck, and her instructor, Driver, hints that with a fair amount of luck as regards favourable weather conditions, she should obtain her pilot's credentials within three weeks.



Graham Gilmour, who was refused—by the Royal Aero Club—permission to take part in the Circuit of Britain, standing by his special Bristol biplane. On the right a *crêpe* laurel wreath is being placed on his hangar as a token of mourning for non-participation.

BRITISH NOTES OF THE WEEK.

Lieut. Watkins and the Vickers Monoplane.

LIEUT. WATKINS is due to sail on the P. and O. boat "China" on August 11th for Australia, where he is to give a series of exhibition flights. He will take out with him the passenger-carrying Vickers monoplane which he is now flying at Brooklands, and which Dr. Mawson has acquired for his Antarctic expedition. Adelaide will be visited first, and it is understood that on the completion of the tour he will join the expedition party and travel South. Mr. Watkins says it is doubtful if the aeroplane will be used for the final dash to the Pole, as it would have to surmount the great ice barrier, which is approximately 10,000 ft. high. What hope is there of surmounting it if it could not be done by aeroplane?

Aeroplanes at Army Manœuvres.

AT the manœuvres which are to be carried out in Essex next month it is probable that one or two aeroplanes will be utilised. This is in striking contrast to the arrangements in France, where it is certain that the number of pilot aviators on duty will be at least three dozen.

The Isaacson Engine Entirely Exonerated.

WE inadvertently did an injustice last week to the all-British Isaacson engine, by giving in our table of results in the Circuit of Britain the Isaacson engine as being fitted to Mr. Hucks' Blackburn monoplane. The engine fitted to this machine was a Gnome, and therefore the Isaacson is entirely blameless for any breakdown which occurred during the race.

Colour Photography and Aviation.

MANY of those who witnessed the various stages of the *Daily Mail* Circuit of Britain secured permanent souvenirs in the shape of photographs, and of these probably the most unique were those in colour obtained by Mr. Charles B. Howdill, Vice-President of the Yorkshire Photographic Union. One which Mr. Howdill has sent to us shows Mr. Hamel starting from Harrogate, and the natural colours of the scene are reproduced very effectively.

To Exploit China.

IT is rumoured that a syndicate is being formed in Canton, China, to establish an aerodrome in that district, and to organise a meeting there early in the spring. Let us hope that no mandarin or other high personage happens to die while the meeting is in progress, or things may fare as badly with the aviators as they did not so long ago with Van den Born when he was giving exhibitions out there.

A Model Club for Merthyr Tydvil.

MR. C. L. WILLS, of Victoria Street, Merthyr Tydvil, is anxious to hear from anyone in the district interested in model aeroplanes, with a view to forming a model club.

Nieuport Monoplanes in Great Britain.

IN response to several inquiries as to where the Nieuport monoplanes can be obtained, we would remind our readers that the agent for Great Britain is Mr. Maurice Ducrocq, whose address is the Brooklands Aerodrome, Weybridge, Surrey.

A Novel Method of Appreciation.

THERE are many ways of showing appreciation of any special feat, and Messrs. J. C. Mount and Co. have certainly invented a novel method. Immediately the news of "Beaumont's" and Vedrines' arrival at Brooklands was known they telegraphed offering to pack the machines and despatch them back to France free of all expense to either aviator.

Audemars, not Vedrines.

THE top photograph on page 656 last week should, of course, have read "Audemars and Valentine," &c. All our readers who have not already written us upon the subject will please note the correction.

The Army Airships.

AFTER a period of overhauling, during which advantage has been taken of the opportunity to effect several improvements, the military airship "Gamma" was brought out on Friday of last week, and, under the direction of Major Sir Alex. Bannerman, cruised for a period of three hours at Aldershot. The new airship "Delta" is now practically completed, and should commence her trials shortly.

FOREIGN AVIATION NEWS.

French Military Competition.

THE list of entries for the trials of aeroplanes to be conducted by the French military authorities has now been published. Machines have been entered by the following firms:—

Antoinette	De Bellet	Lepers
Astra	Deperdussin	Maurice
Bebin	Dhumbert	Moreau
Bilard	Dumont	Nieuport
Blanc	Etienne	Paulhan
Blériot	Fabre	Pessier et Radiguet
Bonnet-Labranche	Farman (H.)	Pierre Pons
Borel-Morane	Farman (M.)	R. E. P.
Bourgoin et Kessels	Goupy	Roissard
Breguet	Guyot	Savary
Caille	Hanriot	Sommer
Clement	Lasternas	Timaskian
Clement-Bayard	Lecomte	Verdier
Collin de Lamiere	Legras	Zodiac

The makers of engines who have entered include:—

Antoinette	Clement-Bayard	Nieuport
Anzani	Clerget	Panhard et Levassor
Aster	Coanda	Peugeot
Aviatic	Dansette et Gillet	Renault
Bariquand et Marre	E. N. V.	R. E. P.
Berthaud	Gnome	Unne
Canda	Gregoire	Verdet
Canton	Labor	Viale
Chenu	Lemasson	

High Speed on a Farman Biplane.

PILOTING one of his racing biplanes fitted with a 50-h.p. Gnome motor, and carrying a passenger, Henry Farman at Bouy on the 26th ult. was timed unofficially to attain a speed of 105 k.p.h. On the 27th ult. Henry Farman was carrying out weight lifting trials, and on one of the small military biplanes carried a useful load of 250 kilogs. On the next day he made a lengthy flight on the same machine accompanied by two passengers.

Passenger Record Beaten.

AT Chartres on Sunday morning Level, on his Savary biplane, fitted with a Labor motor, succeeded in beating the passenger records. Accompanied by M. Junquet, Level covered 241.79 kiloms. in 3h. 13m. 35s. The old record was 224.85 kiloms. in 3 hours.

Vedrines and the Michelin Cup.

EVEN Vedrines will find it a very stiff task to better Lorian's really magnificent effort for the Michelin Trophy, who, as recorded in our last issue, on a Henry Farman racing biplane succeeded in covering 720 kiloms. (469 miles) in eleven hours. Vedrines was to have made his attempt this week, his turning points being Lumeny, near Etampes, and a place near Orleans. Under the new rules the flight this year is a cross-country one over a course 100 kiloms. round, that is 50 kiloms. out and 50 back again, certain stops being allowed for petrol, &c.

Aubrun at Cherbourg.

DURING a visit to Cherbourg last week Aubrun, on his Deperdussin on the 26th ult., circled round the English liner "Adriatic," and then round the "Kaiser Wilhelm II." Two days later he carried out some manœuvres over the water in connection with the submarine flotilla, and his observations formed the subject of a special report to the French Naval authorities.

Flying to the Races.

ON the 25th ult. Lieut. Malherbe flew from Luneville to the racecourse at Vittel, and after the last race was over he mounted his machine and returned to his headquarters.

A New Morane Monoplane.

VERY shortly tests are to be carried out with a new Morane monoplane designed by M. Saulnier. This monoplane is of the tail first type, with the motor and propeller at the back, while the pilot also sits at the rear end.

Cross-Country on Nieuports in a Storm.

ON Saturday last, Lieut. Delage and Lieut. Maillols both flew over from Vincennes to Mourmelon, and reported having had an

adventurous trip, practically having had to fight every inch of the way against a tempest. Their Nieuport monoplanes, which were of the military type, gave every satisfaction.

Wireless Telegraphy from Aeroplanes.

IN the course of some experiments in wireless telegraphy on Sunday last Capt. Brenot succeeded in transmitting a message from a Farman biplane, on which he was carried by Lieut. Menard, to the Eiffel Tower, about 35 miles from Rambouillet, above which the aeroplane was flying when the message was sent.

Bielovucic Changes His Mount.

AFTER remaining faithful to the biplane for a long time Bielovucic has decided to abandon it in favour of a monoplane, on which he will take part in the chief competitions this summer. He has been engaged to give exhibitions at Valencia on the 13th, 14th, and 15th inst.

Japanese Mission at Buc.

THE Japanese mission, now in France studying aeroplanes and other modern aids to warfare, visited Buc on the 26th ult., and several of the officers, including Admiral Hayao Shunamura, were taken for trips by Mr. Maurice Farman. Afterwards Farman *tere* was taken by his son for a trip over Chateaufort.

Leblanc Qualifies for Military Certificate.

BY way of qualifying for the superior pilot's certificate, started by the French Minister of War, Leblanc on the 26th ult. made his first test by flying from Etampes to Orleans and back, keeping his Blériot monoplane at an average altitude of about 1,000 metres. On Saturday last he made the other two tests, flying each time 115 kiloms. at a height of 1,000 metres.

More Voisins for the French Army.

ON the 26th ult. Colliex, before a Military Commission at Mourmelon, carried out some tests with some new Voisin military machines, some fitted with Gnome engines and some with Renault engines. Each carried the regulation load and a passenger, and had no difficulty in passing the required altitude test of rising 450 metres in less than ten minutes. They also easily surpassed the 75 k.p.h. speed test by attaining a speed of 85 k.p.h.

From St. Cyr to Saumur.

WITH the intention of paying a visit to his brother who was undergoing a course of instruction at the Cavalry School at Saumur, Lieut. Malherbe left St. Cyr at half past four on Monday morning, two hours later landing at Pont Levoy for petrol. Leaving there about three quarters of an hour later, he reached the Cavalry quarters at Briel Camp, near Saumur, at twenty-five past eight, having passed over the town on the way.

A.C.F. Aviation Grand Prix Postponed.

IN view of the difficulty in attracting sufficient entries, it has been decided to postpone the Automobile Club of France Grand Prix until 1912.

The Voisin Hydro-Aeroplane.

THE new Voisin of the "Canard" type which has been built with a view to rising from and coming down on the water, made its appearance at Issy the other day. Its general design is the same as that of the now familiar "Canard" type machine, except that it is equipped with four floats and a supplementary rudder under the forward end of the fuselage. One of the floats is placed in front, while the other three are disposed beneath the main planes.

Baron de Caters v. Henry Farman, &c.

A LAWSUIT was recently commenced in the Belgian Courts by Baron de Caters against the Chevalier de Laminne and Henry Farman for infringement of a patent relating to the control of elevators. At the hearing on Wednesday week the case was dismissed, and Baron de Caters ordered to pay the costs.

Another R.E.P. Flyer.

ON the 25th ult., Lieut. Grailly, on his R.E.P. machine, had no difficulty in making his first test for the French superior military certificate, by flying from Buc to Coltainville and back in an hour and a half. His average altitude was 600 metres.

Belgian Height Record Beaten.

AT Kiewit on Wednesday week, Jules Tyck rose to a height of 2,600 metres, thus beating the Belgian altitude record.

A Long Flight in Belgium.

LEAVING Berchem at 7.30 in the evening on the 24th ult., Lanser landed half an hour later on Mont Cesar at Louvain, where he decided to spend the night. At 3.30 the next morning he was away again, and landed at 4.30 at Kiewit, where he intends to try and beat the distance record of Olieslagers.

The Spanish Cross-Country Race.

SPAIN'S cross-country race from Valencia to Alicante and back was won by Le Lasseur de Ranzay, who, it is reported, was using the Blériot which carried "Beaumont" to victory in the European Circuit. The outward journey was made on the 29th ult., when the 140 kiloms. which separates the two towns were covered in 1 hr. 33 mins., while at the end of the return trip on Monday last Le Lasseur's time for the complete course of 280 kiloms. is given as 3 hrs. 48 mins.

After Seven Months' Wear-and-Tear.

AFTER it had been in use practically every day for seven months, Lieut. Mailfert recently sent his biplane to have the planes re-covered at the Farman Works at Bouy. At a trial trip with the renovated machine on the 27th ult. it flew better than ever.

The Spanish Military School.

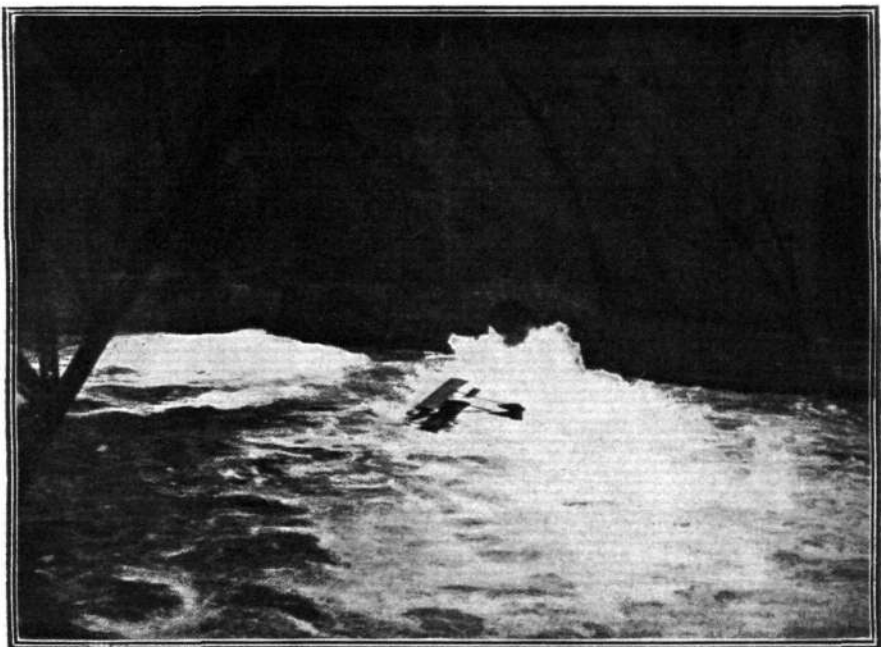
DURING the middle of last week Osmont returned to France, having fulfilled his contract with the Spanish Government to start a Military School at Madrid. Five officers have been taught to fly, and they in their turn are to teach their brother officers.

An Aeroplane Wedding.

BALLOON weddings having gone out of fashion it is not to be surprised that lovers of the sensational should hanker after an aeroplane wedding. But from a report of such a function which recently took place in New York, it would appear to have been a very tame affair. The contracting parties simply sat in a borrowed aeroplane while the obliging clergyman stood on a pair of steps at the side and tied the knot.

N.B.—Not an Aeroplane.

IT should be noted that the death of Harry Darnell, at Plainfield, Illinois, was in no way attributable to aviation. He was doing some gymnastic feats on a trapeze attached to a gas bag, when he lost his hold and fell a distance of 700 ft., being killed instantly.



FLYING OVER NIAGARA FALLS.—It will be remembered we recently recorded the fact that Lincoln Beachey, on June 27th, flew over the Niagara cataract on a Curtiss biplane. Whatever view one may take of a feat of this character, at least the above picture records a remarkable achievement which will go down to history. The photograph shows Beachey passing under the upper steel bridge at Niagara Falls. After having circled over the cataract he then swooped down beneath the arches of the bridge and continued on down the gorge almost to the whirlpool, finally regaining terra firma on the Canadian side.

AEROPLANES AND GUSTS.

IN discussing the disturbing effect of gusts upon aeroplanes it is usual to first describe a particular machine. This is not quite convincing when the object is to determine how machines in general may be made steady in gusts, and a method dealing with the aeroplane as an abstraction, possessed of the minimum essential properties, has certain advantages.

Every glider capable of steady flight may be assumed to possess a self-righting tendency, or a tendency to fly in a plane substantially at right angles to gravity.

Now, in its final analysis, the direction of gravity is nothing more than the direction in which the glider, regarded for the moment as a wingless mass, tends to accelerate relative to the air, so that anything which changes the direction of this acceleration tendency changes, in effect, the direction of gravity regulating the flight path relative to the air, and the plane at right angles in which the glider tends to fly.

In the diagram the central point, A, represents the position of a self-righting glider suddenly attacked by an acceleration of the air from the left at 40 ft. per sec. per second (*i.e.*, a gust of strength 40) represented by the line, DA, drawn 40 units in length to a convenient scale. Special attention is drawn to the fact of the strength of the gust being measured by the acceleration at the

AGH, according to the strength of the righting tendency. If the righting tendency is made less strong, and especially if the glider is as well damped as it should be, the more satisfactory path, AI, will be pursued instead of AGH.

It is the turning up into the path, AG or AI, which constitutes the well known disturbance of the head gust.

If the glider flies in the direction, AC^1 , at its natural speed the moment before the rear gust, DA, attacks, viewing the diagram as before, along EA shows the path during the gust to be of the form of AG^1H^1 or AI^1 , according to the strength of the righting tendency and the damping. The running at the ground in this case is the well known and very objectionable disturbance of the rear gust.

From these considerations it appears the righting tendency, or "natural stability," as it is more usually called, is only suitable for giving a stable pose in calm air, or an underlying average pose in gusty air, and is fundamentally incapable of aiding the momentary stability of pose in gusty air because of its being the very means whereby gusts disturb the pose.

Taking it for granted an underlying righting tendency cannot be dispensed with, the diagram suggests improved stability in gusts may be sought in the discovery of additional dampers of the oscillations, and beyond that, in some means of actually resisting the acceleration tendency, AD, which is the root of the disturbance. A large, light, freely-revolving, constant-pitch propeller, with a considerable amount of fly-wheelage, gives forces of the required nature, and might be employed till better means are known. Such means cannot prevent the pose changing ultimately by the angle, CAF or C'AF', if the gust continues, since such change is inevitable with the least degree of righting tendency, but they may slow down the turning into paths like AI and AI', and reduce the curvatures so much that a gust of average duration will not have time to greatly disturb the pose. Inspection of the diagram also suggests means may be discovered of causing the righting tendency itself to temporarily disappear, or even reverse, at the onset of a gust, so that for a sufficient number of seconds the glider may not deviate appreciably from AC or AC'. If the glider at A had been flying away

through the paper, DA would have been a side gust, and the lateral righting tendency would have determined a lateral righting path resembling AG or AI according to the strength and damping of the righting tendency, but with the usual superimposed left-hand circling movement. The righting tendency is again the source of the disturbance of pose, and is accordingly only in order when just strong enough to determine the underlying average lateral pose, while keel surface, in cutting down the acceleration tendency, AD, relative to the air, appears to be a positive advantage. This theory does not profess to deal with rotating gusts which act on one wing more than the other, but only with linear gusts, and the former are probably the worst disturbers of lateral pose. The diagram may be drawn with equal facility for a gust in any direction and of any strength. For all gusts of strength 40, the locus of D is obviously the circle round A of radius 40, and the locus of E the similar circle round B, shown dotted in the diagram. The

moment, so that continuation of the gust means continuation of the acceleration, not continuation of a mere velocity of the air. Since DA represents the gust acceleration, AD, or the same line measured in the opposite direction, represents the acceleration tendency of the glider relative to the air in consequence of the gust, and AB drawn vertically downwards, 32.2 units in length, represents the familiar acceleration tendency due to common gravity.

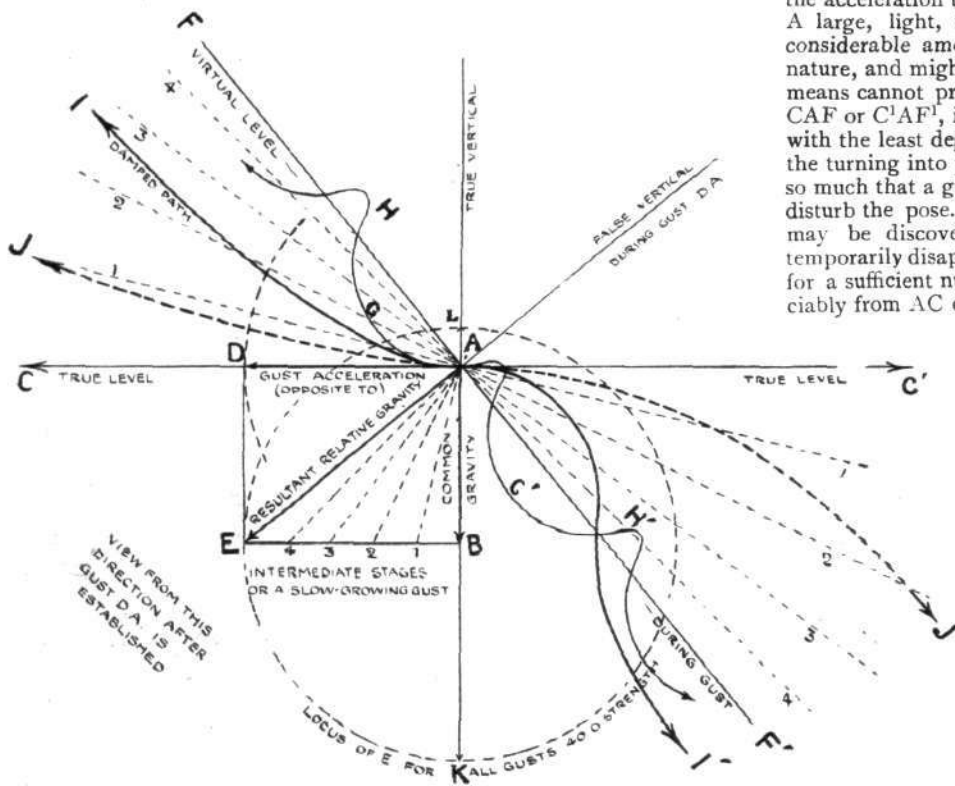
The resultant of AD and AB is AE, which, on account of its representing the whole acceleration tendency relative to the air during the gust, and therefore entirely superseding common gravity in determining the subsequent flight path, is called the "resultant relative gravity." In considering the flight path during the gust it is now only necessary to view the diagram along EA, so that AE may be thought of as gravity, and to regard FAF¹, at right angles to AE, as a virtually level plane with respect to which the glider rights itself in the usual manner, according to the way it is flying at A. Needless to say all flight paths are relative to the air, not to the ground, but being relative paths they fulfil our object in correctly representing changes in pose.

It is essential to understand the acceleration is not itself a velocity, and, therefore, will not *immediately* make any change in the magnitude and direction of the velocity of the glider relative to the air. From this it follows that if the glider were proceeding along AC at its natural speed, it will find itself, the instant the gust commences, running down steeply with respect to AF and AE, and will, therefore, pursue the familiar kind of oscillating righting path,

relative gravity, AE, due to a gust, 40, may therefore range from AK, two and a quarter times as great as common gravity, but in the usual direction, to AL, only one quarter of common gravity, but acting upside down. The former represents the condition of maximum stress in the glider (two and a quarter times normal), while the latter represents the curious "hole in the air" condition in which stresses are reversed, and the glider commences to turn upside down. The turning being somewhat slow and undecided the gust does not usually last long enough to make it serious, provided the aviator, and other movable parts, keep in place under the reversed gravity. In the diagram certain dotted constructions illustrate the modifications when the gust grows less suddenly. In the atmosphere a gust acceleration like DA cannot be instantaneously established owing to the air being compressible, and then AE does not become ΔE at once, but moves more or less slowly from AB through the positions marked 1, 2, 3, 4, while the virtual level, AF, moves through its corresponding positions, 1, 2, 3, 4, instead of becoming AF at once. The righting paths then necessarily become less abrupt in curvature, like AJ and AJ', with less tendency to be succeeded by oscillations, since the glider has more time to adjust itself to the changing conditions while they are changing. In tracing the effects of certain severe rearward and downward gusts, it will be found the slow growing of the gust makes all the difference between the glider turning over backwards through about three right angles, or dipping more slowly towards the ground.

June 12th, 1911.

S. L. WALKDEN.



CORRESPONDENCE.

. The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which they have read in **FLIGHT**, would much facilitate ready reference by quoting the number of each such letter.

Naval Officers and Aviation.

[1282] I should be very grateful indeed if you could kindly inform me, through the medium of your columns, whether there is any opportunity for Naval officers to learn enough of flying to obtain the certificate at a reasonably small cost.

I am sure there are a number of officers like myself, who would be only too glad to have the opportunity of learning, but whose somewhat scanty pay absolutely debar from paying the £50 usually required for the course of instruction. We get of course no assistance from the Admiralty, either in time, money, or opportunity, but I, for one, would be happy to devote my ordinary leave to a course of instruction, were it within my means.

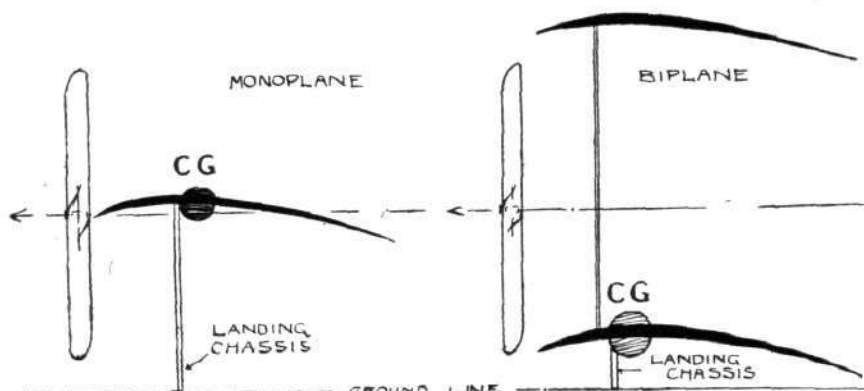
I understand that two aeroplanes have been presented to the nation for the use of the Navy, but is it possible for officers to receive instruction in their use, who have not the wherewithal to pay the £50 usually required by most of the flying schools?

SINBAD.

Biplane versus Monoplane.

[1283] With reference to the much debated question of biplane or monoplane might I draw attention to a little point in which the former may possibly hold an advantage over the latter.

In the case of a monoplane, in order to obtain sufficient ground clearance for the propeller, it is essential to use a much higher



landing chassis than, from theoretical considerations, is desirable. Owing to the position of the centre of gravity, the landing chassis must be constructed very stoutly in order to cope with landing shocks.

A biplane, with the centre of gravity on a level with the lower plane, and the propeller placed half-way up the gap as in the Wright machine, can be fitted with a very light and simple landing chassis. A certain amount of strut work is necessary to connect the two planes although there is no apparent reason why this should not be reduced to a minimum as in the Breguet and Bristol racing biplanes, and it remains to be seen whether the total weight and head resistance of such struts and connections, together with the small landing chassis, can successfully combat the arrangement now used on monoplanes.

It seems that the large biplane with the propeller practically on a line with a lower plane and lifting tail will, within a few months, cease to exist as anything more than a school machine.

C.G.=Centre of Gravity.

Dover.

CHAS. LEE.

Aeroplanes in Military Warfare.

[1284] May I encroach on the hospitality of your columns by thanking Mr. Vessey and D. H. T. for the trouble they have taken in criticising my article on the aeroplane in warfare, and at the same time endeavour as best I can to answer them. The method that occurred to me of keeping the tube vertical was to mount it on a universal joint, and fix on it a small gyroscope. It may interest Mr. T. to know that the sketch was not to scale. I presume that the military aviator will be armed with a map on which contours are shown, and would be much obliged to Mr. T. if he would work out for me to three significant figures the difference between $\sqrt{3008}$ and $\sqrt{3000}$. I have never had the misfortune of having a lyddite shell explode on top of me, but I believe, on the authority of several

officers who have been present on such an occasion, that the shell undergoes something which strongly resembles Mr. T.'s "atomic disintegration." I must humbly apologise for my error in muddling up the air-speed with the land-speed, but confess I cannot see the objection to obtaining the latter by the following somewhat obvious method. Let the aviator mark through his telescope some prominent object, such as a church spire, and "follow" it with his telescope, his fellow passenger, if there is one, noticing the angle the telescope makes with the vertical before and after a time a . Then if a, a' are the angles, $v = \frac{h}{t} (\tan a - \tan a')$, and $\tan \theta$ becomes $\frac{vh}{4a} (\tan a - \tan a')$.

Experience alone could tell the best value to take for a , and when that is found, the barometer could be graduated with $\frac{vh}{4a}$ divisions.

Mr. T. has solved for us the side-wind problem, so I think that provided a gust does not strike the machine as the bomb is being dropped, a fair degree of accuracy could be obtained.

Finally I may state that the apparatus was by no means meant as a solution to the problem, but merely as an improvement on the present crude methods of knocking the ends out of a biscuit tin and aiming through that.

O. D. ATKINSON.

Vortex Principle of Flight.

[1285] Mr. Cooper's theories are old, and have failed not only to explain the flight of the fly but to satisfy even one of the conditions of the problem. I thoroughly tested them nine years ago. It is just those years of experience that have made me cautious about accepting anything without submitting it to every possible test, and that not once but again and again. If Mr. Cooper can give a full and complete explanation of the flight of the fly, illustrated by diagrams, I shall be happy to criticise it.

T. A. DRING.

The Clarke Propeller.

[1286] In answer to Mr. Wilson's letter 1265, my propeller, which gave 81.6 per cent. efficiency, was an 11 ft. 6 in. diameter 4-bladed one.

Whether or not it was tested against others of "precisely equal diameters, &c.," I cannot say, but there is no reason why it should have been, as the efficiency of a propeller not being a comparative result obtained by testing in heats one with another, the values for various propellers, whether of equal diameters, pitches, &c., or not, can be compared from the individual results.

I may mention that I do not have access to results of tests carried out by Messrs. Vickers, Ltd., except, of course, to those made for me.

Kingston-on-Thames.

T. W. K. CLARKE.

Strapping-in Pilots.

[1287] With reference to Icarus' letter in **FLIGHT** on July 22nd, I cannot say that I agree with his views concerning the accident to Lieut. Princeteau. He seems to think that it condemns the idea of strapping-in the pilot, but this is not necessarily the case, for if the pilot had been wearing one of the patent easily-detachable belts he would have been able to escape.

In my opinion a pilot is in by far the safest position on a machine when he is sitting behind the engine with a safety elastic belt. If he cannot have the engine in front then he is safest if he does not strap himself in at all.

Shoreham.

W. A. C. MORGAN.

Steering by Tail-Twisting.

[1288] It will interest the various persons who have recently rediscovered this principle to hear that in 1908 Mr. Holroyd Smith, in opening the discussion on a paper read by Mr. Herbert Chatly before the Society of Engineers, commented on the use of the tail for steering by crows and other birds, and made the following statement (I quote from the transactions):—"He had given an experimental illustration of this in his lecture of over thirty years ago. At the rear of his double plane glider he had a little horizontal rudder, and by simply twisting it to right or left, and without altering the set of the planes, the glider could be made to turn in any desired direction."

Kingston-on-Thames.

DONALD EASDALE.

MODELS.

What are Freak Models?

[1289] I am obliged to Mr. D. C. Holmes for his reply (No. 1280) to my recent letter. First of all, with regard to the statement that the models which fly longest and farthest are the most efficient. Assuming that every model had the same weight of rubber and the same propeller diameter, this would be correct, but is it fair to expect the average competitor to compete with the designer who over-powers his machine in order to gain a "cash prize"? The generally accepted idea of an efficient aeroplane is one that flies with a minimum of power, such as the standard Roes and Nieuports, but Mr. Holmes appears to be under the impression that efficiency is merely petrol-carrying capacity. A pilot who discarded his passenger-seat and substituted an extra petrol tank would, according to Mr. Holmes, materially add to the efficiency of his machine. On the same principle it might be contended that efficiency in a gas-bag ought to be measured in gas capacity!

In reference to the 16-in. model with two 12-in. screws that Mr. Holmes states he has not seen, it certainly was, as he suggests, a fast machine. Mr. Holmes is still under the erroneous impression that the great aim of model makers is to *win* contests, and that this end is their sole and only *raison d'être*. The model exists chiefly in order to improve the full-sized machine. If contests can be won as well, so well and good; but if everything is sacrificed to the purely sordid end, the model ceases to be of practical use, and is merely a flying-stick, a "freak," or a toy.

In reference to another matter, I would describe as *official* a flight that was timed with a good stop-watch—or measured, as the case might be—by some properly qualified observer.

I am, pleased to hear that Mr. Holmes' machine has flown 2,000 ft., and if he can repeat this I am prepared to double my recent offer of 5s.

ROBERT P. GRIMMER.

Model Construction.

[1290] Replying to F. G. Newman (1098), a good way to fix a propeller on to a bicycle spoke is to cut a thread on the spoke itself, screw the propeller boss on to the thread, and fasten with the nipple of the spoke.

Eastbourne.

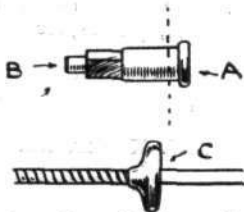
F. A. CAFFYN.

[1291] Replying to letter 1098, the following answers may be helpful. (1) 9-in. propeller, (2) about 7 yards strip elastic, (3) I do not advise fixing a propeller to a bicycle spoke, as a proper shaft can be bought from any model makers for 3d. or 4d. Strip elastic gives much better results than square section.

Manchester.

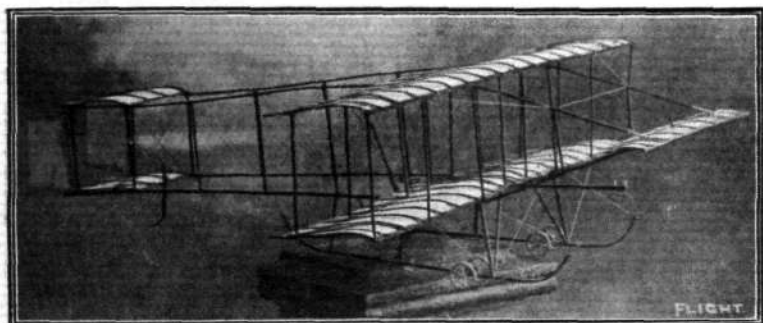
W. SAUNDERS.

[1292] Replying to F. G. Newman, in letter 1098, I enclose sketch of a method of using a cycle-spoke and nipple. Cut off the head of the nipple, and fix the part, A, to the spoke, as shown at C. Drive the other part, B, into the boss of the propeller, which can then be screwed bodily on to the spoke up against the part, C, which thus acts as a collar.



F. DORSEY.

[1293] We herewith enclose photo of a 1 in. scale model Farman biplane which we have made from a parcel of materials and scale



drawings supplied Mr. E. W. Twining (costing 4s., post free). It took us about a fortnight to build in our spare time.

We have made about 50 models during the last three years, and some of our later ones have flown from 150 to 200 yards.

For any of your readers who wish to purchase a really good flyer we recommend them to one of Mr. Clarke's (Kingston) D flyers, price 3s., which are specified to fly 600 ft., but with a little practice anyone could get them to fly 250 yards.

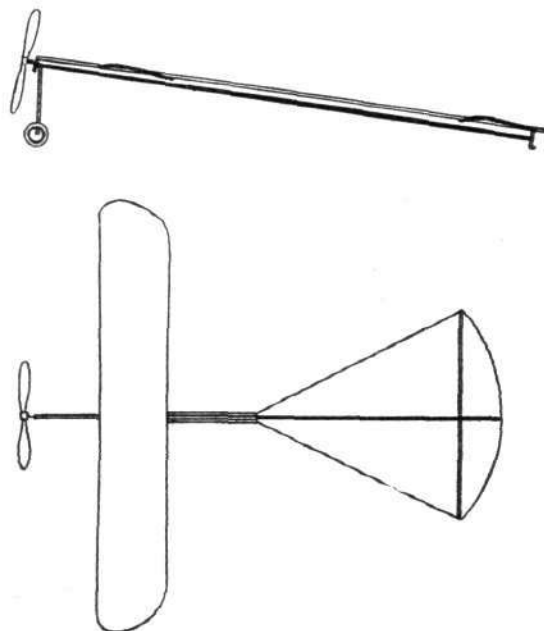
We should like to see more model makers in Croydon, as there are several good flying grounds in the neighbourhood.

Croydon.

H. AND C. SMITHER.

[1294] I know from experience the difficulty in making model Blériot and other types of monoplanes (to scale) to fly any distance, but I am surprised that some enterprising model-maker has not put on the market a small flying model which, although not exactly to scale, has some resemblance to a standard type.

There are a number of models which are made to scale and which fly 100 feet or more but they are generally expensive. The type of



model to which I refer is neither expensive or complicated. The fuselage is a single stick with simple planes, the main plane is set back a little, and a light chassis à la Blériot. I have heard several people express the same desire for a model which fulfils these conditions. Those who merely want long distance flyers can easily get them and cheaply, but there are also many people who are prepared to sacrifice length for appearance.

Stonehouse, Glos.

H. B. PRATT.

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